BULLETIN OF THE

TAYLOR SOCIETY

AN INTERNATIONAL SOCIETY TO PROMOTE THE SCIENCE AND THE ART OF ADMINISTRATION AND OF MANAGEMENT

> BUSINESS has been becoming more complicated and exacting, has demanded more intelligence and clear, straight thinking, and has required more of the scientific approach to its problems in every phase of management.—Page 55.

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BULLETIN OF THE
TAYLOR SOCIETY
AN INTERNATIONAL SOCIETY TO PROMOTE THE SCIENCE AND THE ART OF ADMINISTRATION AND OF MANAGEMENT

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Comment

THE Prague International Management Congress (see page 93) is an undertaking in which American executives and engineers should have a genuine interest, for a joint committee representative of American management societies has accepted the responsibility of organizing the program. The Congress is an evidence on one hand of the enterprise and perspicacity of the Czechoslovak people, and on the other hand of the high regard in which Europe holds American achievements in management. The Joint Committee on American Participation hopes that there will be a large attendance of American delegates

WITH this issue is completed the printing of all but one of the papers presented at the January meeting of the Society. If our readers will take the time to review these papers it will be discovered that, notwithstanding the variety of phases of management considered, practically all the papers called attention to two things—the fundamental principles of management as formulated by Taylor and the larger responsibility general management is being forced to assume by present industrial conditions. It was natural that there should be such general reference to the Taylor principles in the papers of the January meeting, for the general theme of that meeting was the development of scientific management during the past decade; but it is interesting to note in this connection that generally more frequent references to those principles are to be found in the current books on management—evidence of the fact that under present industrial conditions, problems of management are being thought of more in terms of principles and less in terms of mechanism, and of the further fact that no one but Taylor has yet formulated a coherent, logical body of principles.

IT IS obvious that under present conditions general management is being forced to assume greater responsibility for management than ever before, and the reasons seem equally obvious. Ownership is vitally interested in the results of management and holds general management directly responsible for results. General management may desire to pass responsibility along to department heads and on a sellers' market is likely to yield to the temptation so to do; but on a buyers' or an uncertain market general management cannot afford the risk of shifting responsibility. Under such conditions it must assume its responsibility of leadership, inspiration, education and general control. For that reason under present conditions we see a great awakening of general management to a sense of its responsibility—and activity. The general manager's first reaction to red-ink balances was to cut expense right and left—sometimes ruthlessly and unwisely—but his second reaction was to take the initiative in constructive effort. Now he spends hours with department heads, sharing with each the responsibility for policies and plans and bringing them together into new cooperative effort. Great as was the advance in management during the decade before the war, the advance during the next decade promises to be much greater because of the new responsibility forced by industrial conditions upon the general management.

Spring Meeting of the Taylor Society
Cambridge, Massachusetts
April 24, 25, 26, 1924

THE Spring meeting of the Taylor Society has been arranged in cooperation with The New England Section of the Taylor Society, under the auspices of Harvard University Graduate School of Business Administration, The College of Business Administration of Boston University and Massachusetts Institute of Technology.

The Thursday session will be held at Harvard University; the Friday sessions at Massachusetts Institute of Technology, and the Saturday morning session at Boston University College of Business Administration. Dinners for members and guests attending the meeting will be held Thursday at Harvard Union and Friday at Walker Memorial Building, Massachusetts Institute of Technology.

The program follows:

Thursday, April 24, 7:30 P. M.

Presiding: Charles R. Gow, President, Associated Industries of Massachusetts.

Paper: Who Can Hire Management?
By Henry S. Dennison, President, Dennison Manufacturing Company, Framingham, Mass.

At a recent meeting of the New England Section of the Taylor Society Mr. Dennison gave an informal talk which made a profound impression. At the request of many of those who heard him he has consented to open the Cambridge meeting with a more comprehensive address along the same lines.

Discussion:

Led by W. L. Gray, First National Bank, Boston; Reginald Washburn, The Washburn Co., Worcester, Mass.; Carleton F. Brown, Corona Typewriter Co., Groton, N. Y.; Francis B. Purdie, R. G. Dun & Co., Albany, N. Y.

Friday, April 25, 10:00 A. M.

Presiding: Howard Coonley, President Boston Chamber of Commerce.

Paper: Scientific Management and the Workers.
By W. O. Lichter, The Thompson and Lichtner Company, Boston, Mass.

Mr. Lichtner will present some general conclusions concerning the attitude of workers toward scientific management derived from a professional experience which has included the cooperation of organized workers in engineering work.

Discussion:

Led by C. L. Baine, Boot and Shoe Workers Union, Boston; John Calder, Lexington, Mass.

Friday, April 25, 2:00 P. M.

Presiding: Fred Cullen, President Johnson Educator Food Co., Cambridge.

Paper: Master Planning Control of Sales and Production.
By Joseph H. Barber, Staff Assistant to the President, Walworth Manufacturing Company, Boston, Mass.

The first application of scientific management principles was to production. During recent years the application of the principles has been extended to include selling and general control. The Walworth Manufacturing Company is one of the pioneers in the development of precise general control—master planning which coordinates sales, finance and production.

Discussion:

Led by E. E. Brooks, Dennison Manufacturing Co., Framingham, Mass.

Friday, April 25, 7:30 P. M.

Presiding: Richard A. Feiss, President Taylor Society.

Paper: Industrial Psychology—A Layman Asks Some Questions.
By H. S. Person, Managing Director, Taylor Society, New York.

At the recent meeting of the Taylor Society—New York, January, 1924—the members of the Society manifested an intense interest in industrial psychology, and by vote requested that papers on that subject be presented in future meetings. The executive officer of the Society ventures to present, preliminary to a series of papers by psychological experts, a paper which aims to formulate some of the queries of practical executives.

Discussion:

Led by Professor Edwin M. Chamberlain, Boston University; Horace B. Cheney, Cheney Brothers, South Manchester, Conn.; Lillian M. Gilbreth, Montclair, N. J.; Johnson O'Connor, General Electric Co., Lynn, Mass.; and Professor Daniel Starch, Harvard University.

Saturday, April 26, 10:00 A. M.

Presiding: Walter Humphries, Secretary National Association of Wool Manufacturers, Boston.

Paper: Significant Savings in Textile Mill Operations.
By Norman T. Thomas, Superintendent of Jackson Mills of Nashua Manufacturing Co., Nashua, N. H.

The textile industry of New England is confronted by many major problems, not the least of which is a developing severe inter-regional competition. It is therefore especially timely to inquire, by inference from a case presentation, to what extent "the management of precision" may offer a partial solution of the problem of competition.

Discussion:

Led by Carl Bigelow, Cooley & Marvin Co., Boston, and E. H. McKitterick, Lockwood Greene & Co., Boston.

A Decade's Development in Management[1]

Trends and Results of Scientific Management

By HENRY P. KENDALL[2]

IT HAS been suggested that I consider this evening the difference between unsystematized, systematized and scientific management, reviewing from the point of view of ten years later, so to speak, the subject-matter of an earlier address.[3] Something worth while might be gained by reconsideration of that subject, for even in these days there are consultants and practitioners—ostensibly of scientific management — who confuse systematized and scientific management; but I have reconsidered that address and prefer to let it stand as it is. The distinction there drawn still holds good, even for the scientific management of today, which is both more extensive and more intensive in its application.

The point of view of the earlier address was that of production management, while tonight I shall consider principally other fields of the application of scientific management. But let there be no misunderstanding; scientific production management is no less important than it was ten years ago—it is more important. Consideration of developments during the past decade calls for emphasis upon the new phases, but that does not mean that one considers the earlier phase of development of less importance either absolutely or relatively. If we have learned that scientific management in the shop requires also its application, for instance, in sales and personnel management, we have also learned that scientific management in sales, personnel or any other phase of management is conditioned on even more scientific management in the shop. Do not assume that Taylor was unaware of this; he stuck to his last, but he was aware of the necessity of other lasts. I recall that a small group of us were once querying him at Rockland, Maine, and one of us asked him why he had not turned his attention to personnel, sales and other aspects of business. He said he felt his life would be too short to attempt demonstration of the application of his point of view to those fields; that the most and best he could do was to make a thorough demonstration in the field of production management; that others on the basis of that demonstration could carry the demonstration into other fields of management.

I do not propose to consider tonight the tendency of scientific management during the past decade to extend laterally—to other plants and to other industries than those of its earlier application—its quantitative development. I am more interested in its development vertically, qualitatively—to more phases of management. Business has been becoming more complicated and exacting, has demanded more intelligence and clear, straight thinking, and has required more of the scientific approach to its problems in every phase of management.

Business has become conscious of a swinging through a cycle. A tremendous pressure on production came immediately before the war, and was intensified during the war and in the secondary inflation that followed. Then came a drop in business—the near-depression which for many industries was a real depression—which put a test on the principles of scientific management. Both the rise and the fall of demand and of production applied very unusual tests to this form of management: how could it provide control in a time of expansion and—much more important—what would be the effect of the larger overhead in scientific management when it came to curtailing, to trying to show black ink figures on 65 and 60 and 55 per cent of normal production?

We are faced today with anywhere from 15 to 30 per cent more productive capacity than we can utilize, because of the war expansion, lessened exports, and a timid domestic market. Costs are high; wages are at a new high level because of the war and show no tendency to decline. It has been the tendency in past depressions for wages to run along on a level even after depression has set in, although earnings will follow fairly closely the line of depression.

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[1] An address before the Taylor Society, New York, January 24, 1924.

[2] Boston, Mass. President Lewis Manufacturing Co., Wateree Mills, Addison Mills, Walpole Trust Co., Slatersville Finishing Co.; Treasurer Plimpton Press; Director Eastern Manufacturing Co., Reed-Prentice Co. (From Who's Who, 1922-23).

[3] "Addresses and Discussions at the Conference on Scientific Management," 1911, published by The Amos Tuck School, Dartmouth College, pp. 112-141; reprinted in Thompson's "Scientific Management," pp. 103-131, and *Bulletin of the Taylor Society,* Vol. VIII, No. 5, October, 1923.

This new production capacity, the new standard of what industrial managers think is the normal output of their plants, has put an added pressure on the production organization for economies and lowered costs, the like of which we have not seen for years. It has likewise put a pressure on the sales organization for greater volume, new products and new markets. It has put a pressure on the financial, accounting and controlling organizations for exact knowledge of internal and external conditions, by which they can establish policies and lay out their courses. At no other time have the exactions been so great in that respect.

How has scientific management aided both in expansion and in contraction of business under these conditions? I propose to consider these questions with respect to *first*, manufacturing; *second*, industrial relations; *third*, selling and *fourth*, control. What have been the outstanding tendencies and results?

I. Developments in Manufacturing Problems

A. Plant Location

The engineering, the scientific point of view which Taylor inspired in management has put new emphasis on the importance of studying the plant, both location and construction. Traditions have been departed from more in the last few years than ever before. The high freight rates and the importance of being near either the sales market or the raw material market have made new studies necessary in the geographical location of plants. High freight rates, social legislation in the northern states, and the drift of the center of population and of purchasing power steadily westward have affected, for instance, the textile industry; and there has resulted a tendency to study scientifically the problem of location with respect to long-time policy. Many mills are moving south; some even to the west. Paper mills have a similar problem with respect to supply of wood pulp. The paper mills of Wisconsin, where it is estimated there are but eight years of pulp wood left, the Maine mills and New Hamsphire mills have a problem and in consequence there is an unceasing tendency to develop in Canada to be adjacent to raw materials.

The power problem resulting from the high price of coal and the danger of interruption of the coal supply, the problem of labor supply and cost, the cost of living, the cost of owning homes—all of these facts have been given new study with relation to the location of mills and of plants.

B. Plant Construction

There has been a departure from tradition in the buildings, even in such an industry as cotton manufacturing, which has the tradition of years back of it. The history of progress in cotton mill machinery gives 1887 as the last time when any improvement of consequence in textile machinery was made. Cotton mill buildings until a very few years ago were similarly built according to an early standard. Within the last few years departures have been made. One textile firm studied the flow of the work and, departing from traditions, put in mechanical and gravity conveyors—an adaptation of the Ford idea to cotton manufacturing for the first time.

Recently a hat company in Connecticut felt that they needed to put themselves in a strong competitive position with the best equipped plant possible. They made very careful studies and decided that instead of revamping their present buildings, they would build an absolutely new plant, requiring a large investment, although their present equipment is quite up to the standard of their competitors. They employed production and mechanical engineers and mill architects who are working together to produce the very best plant possible.

In modern plant design new consideration is being given to the comfort of the workers. The war strengthened the position of labor and created an additional incentive for employers to turn more than ever before to a study of the labor situation within their own plants and of general labor tendencies; and the more enlightened managers show, in their building design, greater consideration for the comfort and the pleasure of their employees at work. Recently I visited the new plant of the President of this Society, and was surprised and pleased to see the amount of floor space which he had deemed it wise to give to the comfort and recreation of the employees. Engineers are thinking in those terms now for almost the first time.

C. Machinery and Equipment

I have not very much to say about machinery and general equipment except that high wages and keen competition are giving a new impetus to a study of labor-saving machinery and its economical arrangement and utilization, and to mechanical and gravity means of internal transportation. The increasing use of machinery has been one of the most conspicuous aspects of the development of manufacturing during the past half century; the most noteworthy feature of the past decade has been simply a more intense development due to more intense competition and ever increasing costs. The constant effort to substitute labor-saving equipment for labor has far-reaching effects. One concern found that the introduction of new equipment at one point in processing so influenced the volume of flow at that point as to necessitate adjustment through new or additional equipment at other points and an intensive study of the methods of operating and of handling material.

D. Purchasing and Materials Control

The scientific attitude towards management problems has given impetus to the study of the operating problem, and this phase of management has made a good deal of progress in the last ten years. And in purchasing a closer relationship between stores control and purchasing has been generally recognized.

One of the companies in which I am interested set up for a goal a few years ago a stores or inventory turnover of six times a year, as against the best previous practice of perhaps three or four times. That was accompanied by a closer relationship between purchasing and stores, a study of materials, of markets, of times of delivery, and of business conditions in the industries from which we purchased. We have been meeting that six times turnover for about two years. It released $50,000 of working capital for uses related to an expanding volume of sales. What does that sort of thing mean if carried out as successfully, or more so, in for instance a concern like the General Electric Company, which advertises to sell 420,000 different articles and carries in stock between 4,000,000 and 5,000,000 parts?

A large company may find economies in setting up a special research and statistical department. One of the largest industrial companies—which I regard as the best managed large industry in this country—has within the last two years added an economist from one of our big universities to its staff. The comptroller of that company told me that while he had not expected to get any good from the studies of that economist until he had been there a year or two, in his first six months he made studies in fundamental tendencies in commodity prices, and the suggestions that he made to their purchasing department had already saved them several hundred thousand dollars.

Industry is not always willing to take the advice of such specialists, as the following statement from a large rubber company suggests:

> It would seem right to say that our statistical researches have not always been adopted. An example of this was the last coal strike in 1922. We presented studies showing that a sharp rise in bituminous coal prices in the past has always taken place when surplus stocks reached 20,000,000 tons, and we predicted that this point would be reached July 1st, 1922. This forecast was within 15 days of being correct. Prices began to rise sharply on July 15th, 1922 with the result that we paid around six and seven dollars for our supplies for the months of August, September, October and November. We have completed studies on the present outlook on coal and our people have adopted our recommendations not fully but about eighty per cent. This study shows that there will be a strike on April 1st, or if not, there will be an interruption of production. The coal stocks are around 65,000,000 tons, so that about June 10th, 1924 the 20,000,000 tons surplus mark will be reached, prices will rise sharply and will continue at high levels until production is resumed and there are surplus stocks of 30,000,000 tons. This production follows our forecast in October that the time to contract for winter supplies of bituminous coal would be just before President Coolidge's message to Congress or about fifteen days after. This prediction proved correct information on coal. Our executives have adopted this suggestion and we now have in our storage yards 15,000 tons of coal.

1. Joint Research in Purchasing

Statistical research has been accelerated a good deal in the last ten years—both by companies themselves and by organizations. The Retail Research Association, established seven years ago for the benefit of certain non-competing dry goods department stores, with a membership of seventeen companies, is studying their organizations, methods and sources of supply, and is now running on a budget of $500,000 a year. It represents the purchases for sales that amount to $225,000,000 a year. Recently there has been formed in Boston a Manufacturers' Research Association, with a staff paid by assessment among a membership of twelve non-competitive manufacturing establishments, which is making the same kind of close analytical study of the different phases of management. Each member of this association has claimed to have saved at least the cost of the participation, and some of the concerns after less than a year's operation have saved it many times over. We have not reached the end of what analysis and thought, team work and exchange of ideas will do on the purchasing problem alone.

E. Time Study and Wage Systems

With respect to the efficiency of the workers, time study has been made a matter of fairly common practice, due to Taylor's efforts. Contrary to the opinion of a good many, time study has two distinct functions: first, to find the best way of doing a thing; and, second, to determine the proper elapsed time for doing it, as a basis for some form of incentive wage and for the better control of routing.

The particular method of wage payment is not important, but I think that in the past few years there has been a tendency towards a policy of some form of wage payment which has a relation to performance. The non-financial incentive methods of Robert Wolf and the development of the Bedaux system indicate that profitable study can still be made and is being made with respect to methods of wage payment.

F. Planning Room Control

Centralized control through the planning room is becoming more extensive and more intensive—more precise and effective because of the statistical knowledge which the chief executive now gets. I had considerable aprehension after the war as to what would happen when we were forced to curtail, whether we could cut down the overhead of planning room and functional management when we had a declining market. I have answered that question for myself conclusively.

In one of our plants which was affected by the aftermath of the war, so that its output dropped to one-third and was only by sales pressure brought up to 55 per cent, we were able to make necessary economies without cutting into the vitals of our control organization and to show eventually black figures on 55 to 60 per cent of normal output. I am satisfied that we could not have approached that control, that definite predetermined efficiency and cost without the Taylor methods.

In another plant we had somewhat similar conditions. I was pleased the other day, on receiving the figures, to learn that although because of competitive conditions, they had been able to operate on only 71 per cent of normal volume this last year, they had showed a profit of 13.3 per cent of net sales—in a highly competitive market and on a very close profit margin. Facts of that kind convince me not only of the efficacy of Taylor principles and their application, but of the importance of following them in bad as well as good times.

II. Industrial Relations

The belief of a good many that labor had had its day during the war, and that after the war the employers would have their day and the open shop would be established pretty generally throughout the country, has not proved sound. Notwithstanding certain setbacks, labor unions have increased in number; their treasuries and their strength have increased. The United States follows in many respects the same evolution as that of the older civilizations, and while we may not have to look forward to labor government in this country as is the case now in England, nevertheless it is very significant that labor has become stronger in negotiations relative to wages and conditions of work. We find that wages are from 100 to 110 per cent higher than the pre-war level, and the cost of living is only 62 or 63 per cent higher. Hours have been shortened. The worker has a better standard of living. He has more leisure. He is more of a student of economics.

I was interested four or five years ago in carrying on some negotiations with a labor union. The employers in the particular industry were gathered around a table, ready for negotiation with the usual horse-trading point of view. In came the executive committee of the union, and the secretary in a very businesslike way opened up a briefcase and said: "Gentlemen, the cost of living has advanced so and so, according to the figures published so and so, found on such and such a page of the Bureau of Labor statistics; wages in our industry have advanced only so and so. Now, gentlemen, let's get together and discuss our wages in the light of the cost of living." The employer group was completely taken off its feet, and before the next meeting they had an economist working out some of the facts. Things have taken a new turn.

A. The Basis of Sound Industrial Relations

One evidence of this new turn is the additional attention industry is giving to the question: What are the essential things that must be done to make labor contented? Whether you are for the open shop or whether you believe that labor ought to organize, and prefer to deal with organized labor, there are certain things which I think have been demonstrated as essential to sound industrial relations:

First: The worker wants security in his job. Whiting Williams and other men who have lived intimately with him have ascertained that his chief horror is the danger of losing his job.

Second: He wants an adequate wage, adequate as measured in commodity value.

Third: He wants a voice, individually or collectively or both, in the determining of conditions which immediately surround and affect him.

Fourth: He wants to be under the right kind of a foreman.

Fifth: The more ambitious worker wants an opportunity to raise himself by his own efforts into work of higher responsibility and higher earning capacity.

What have been the tendencies in scientific management to meet these desires?

1. Stability of Employment

I was listening the other day in our Research Association in Boston to a man who was advocating unemployment insurance. He said he had looked into it and it really would not cost as much as he had thought it would cost, because 60 per cent of his employees had worked less than a year in his plant. That interested me and I thought I would like to see, not for the purpose of unemployment insurance but for information, what the figures are in two of our plants—one of them the Plimpton Press at Norwood where, so far as we know, we were one of the earliest to functionalize employment and personnel. This plant was moved from Boston and established in Norwood twenty-six years ago; it has a normal working force of 721. I found that 4½ per cent of the force had worked there twenty-five years, 11½ per cent twenty years; 20 per cent fifteen years; 33 per cent ten years; 53 per cent five years; 64 per cent four years; 74½ per cent three years; 80 per cent two years; and 88 per cent more than one year. Part of that is due to a determined effort on the part of the company to stabilize employment in what is a seasonal industry. This has been done in two ways: one, by bringing in work that can be done, even at a loss, during the winter and the dull season; the other, by training in gradually high school and college students to help in the school book work at the peak season before the schools open.

The labor turnover, exclusive of that group of people who come in from school in the summer and go back to school in the fall, is interesting, too. Although the plant employs a large number of women and girls for whom turnover is normally higher than for men, the turnover in 1919 was 46 per cent; in 1920, 52 per cent; in 1921, 13½ per cent; in 1922, 15⅓ per cent; and in 1923, 14½ per cent.

I turned to another concern, in which we really did not have effective personnel work until 1918. During these six years of operation I got the figures. In this plant, 56 per cent have been there five years; 62 per cent, four years; and 73 per cent, two years—though here also quite a number of workers are girls and women.

While our works manager was getting out those figures he gave me some others which illustrate that stability of employment develops a feeling on the part of the workers that they are part of the concern. They talk about "our plant" and they become more and more experienced. In one department where the workers are machine tenders, where there has been no change in wage method—a flat hourly rate—there has been this last year, traceable the works manager thinks to just this growing feeling of proprietary interest, an increase of 11½ per cent in the man-hour product from that department for the year. Now, mind you, that is just a machine tending job where the speed or rather the output is determined by the machines and the increase comes in less lost time.

In another department in the same plant which is entirely hand work, there used to be a very low rate of production. They had a poor foreman and bad conditions. They got a better type of foreman, corrected working conditions and reduced labor turnover. The men were still on a weekly wage with no financial incentive, but the output measured in terms of pounds per man-hour increased from 113 in 1913 to 143 in 1920, 285 in 1922, and 378 in 1923.

I have been very much interested in the first joint efforts so far as I know in this country for the employers in an industry to accept unemployment as management's responsibility and to provide for it as a charge on industry. The Chicago Industrial Federation of Clothing Manufacturers and the local organization of the Amalgamated Clothing Workers of America have worked out a plan by which the workers are assessed 1½ per cent of their wages and the company contributes a like amount, so that during the dull seasons workers are guaranteed for four or five weeks, I think it is, 40 per cent of their wages. This is a much saner method, it seems to me, of attacking the problem of stabilizing employment than the English method of having it done through the government.

2. Adequate Wages

Taylor early enunciated the fact that low wages are not necessarily economical. In fact, he went so far as to say they are uneconomical. I think those of us who have been practitioners in that school hold that belief. It is the labor cost per unit that is important, not the wage.

Higher wages and higher earnings accompanied by low costs depend on stability of employment, freedom from labor turnover and precise control. Some illustrations of what is being done on those lines have already been given.

3. A Voice in Management

I have not yet found any employee who wants to sit on the board of directors, who feels that he can contribute to the general financial policy or the general sales policy. But workers everywhere have a lot of concern about that which immediately affects them.

The development of the works committee to capitalize in the manufacturing problems of the company the latent intelligence of the workers has been given new impetus. Works committees, like well organized employment and personnel departments, serve to form lines of communication: outlets for getting grievances out of the worker's system, and for expressing his aspirations.

Take again the labor unions. There is a growth unmistakably in the demand for collective bargaining. I am familiar with its development in the printing trades with the old strongly established conservative unions, for the most part under pretty intelligent and able leadership. I believe that in some way those who are compelled by necessity to deal with labor unions or who wish to, have got to find a better basis of working than they have had in order to insure against industrial disputes. It is quite possible to have strikeless eras, I believe. An understanding of the background of unionism, of the abuses and grievances upon which unions have thrived, of their underlying philosophy and traditions, is essential in dealing with them. In some unions in industries where the unions are strong and can curtail output and limit apprenticeship, it is a vital thing for the manufacturers to insure their future source of supply of labor, and the easiest way in such cases is by cooperation with the unions. On the other hand, in non-union plants, it seems to me it is essential to keep the organization free from grievances and from unrest, and to develop through shop committees and other methods responsible leadership, so that if those plants are taken over at any time by the unions you have a responsible body who have confidence in the concern and are not going to be stampeded by a Bolshevik agitator. That to my mind is the insurance that one should secure in operating a non-union plant.

4. The Right Kind of Foremen

When the history of the operations in France is written, a large part of the credit will go to the lieutenants and second lieutenants, the men who lived close to their men, who helped them in their troubles, who were there personally when they went over into "No Man's Land." And so to the foremen in industry. I think that industry by and large gives too little attention to the importance of the foreman. It is the foreman who represents the point of view and the personality of the company to the men, and there is nothing that is such a cause of grievance among employees as a foreman who is unfair, disagreeable, surly and ever fault-finding. Provision of proper foremanship is one of management's major tasks.

5. The Opportunity to Advance

It is pretty deadening for an ambitious, intelligent fellow, working away at one machine all the time, with a growing family, trying to pay for a house, wanting his children to go to high school and to get into an industrial stratum better than his own, to feel that he is hemmed around and limited in his sphere. He cannot be a contented workman. You have got to have a contented workman. Workers must have the opportunity to rise by their own efforts, their own intelligence and industry. That opportunity can come only through a well functioning employment and personnel department and the spirit of the plant back of it to teach and develop all ambitious employees. Corporation schools, vocational training in the plants and all that sort of thing have been a reflection of this consciousness on the part of employers.

There is a chain of candy stores that use as their slogan, "Happiness in Every Box." I like to paraphrase that by saying, "Happiness in Every Shop." And that will mean happiness in the homes and in the community.

Revamping the physical and the human side of the cotton mills in the South is a fascinating story and a problem in itself. I have been interested in a couple of these mills for six or seven years. We have improved conditions a little relatively—in the long run not very much—but the friendliness that crops out as you walk through the mill and the village is very different from what it was on my first visit—when no one looked up, when it was not regarded as safe to be in the mill village after dark. A trip now to those mills is a veritable spiritual uplift.

B. Psychology and Industrial Relations

The subject of industrial relations must not be left without mention of a new measuring device which management is using—the psychological test. There are four essentials which an employer wishes to know about an applicant for work. *First*, his general intelligence and ability. Now it doesn't need to be high. It is a mistake to put into a blind alley job a person of intelligence beyond the need of that work. *Second*, his habits of industry: how hard does the man or girl like to work? The idea of everybody being ambitious is, beyond certain levels, an exploded theory. I have tried to advance men into positions of greater responsibility and have them come back to me and say: "We don't want the extra money and the extra responsibility. We are happy at doing this job at that wage level and we would rather do it because we are happier doing it and it is less wear and tear on us." *Third*, his interests, What does he like to do? What gives him the most pleasure in doing? *Fourth*, his personality. How does he get along with people? How does his executive capacity or his willingness to follow fit him for the job?

Not all of these qualities can be tested, but in my paper of ten years ago I raised the query if psychology applied in the selection of workers by the development of the Binet test or something of the kind might not help in reducing misfits of square pegs in round holes. Because of that query and the interest in it, I have been looking into what applied psychology has done. I was interested in following the work of Walter Dill Scott and the psychologists whom he brought together in determining the rating tests for the classification of the draft army. He frankly admitted to me that these tests were very hastily put together; they accomplished something but were just a beginning in showing the possibilities of tests.

The General Electric Company in West Lynn has been going somewhat extensively into tests for the selection of workers because they were faced with the necessity of reducing their labor costs. One of their operations involves the preparation of jewels for the parts of a meter. They purchase sapphires from the size of a peanut to the size of a walnut. They cannot use another stone which it is very hard to tell from a sapphire. The Company engaged, at a considerable expense, George Kountz of Tiffany's to come up and show them how they could differentiate this sapphire from white jade by optical methods, but they were not always sure of the optical refraction, because it changed with impurities. So they tried to train girls to do that work. Now they do all of that sorting by girls who take these little precious jewels and toss them up in their hands and feel the weight of them—the specific gravity is about 3.8 and 4.2 respectively—and drop the sapphires into one place and the white jade into another and they do it more accurately than could be done by the Kountz method of optical refraction. They have arranged the selection of these girls by tests designed to test their coordination between vision and tactile sense, and these tests are working out quite accurately.

The general manager said he had some startling examples of the value of these tests, and though startling examples are not significant, this example is very interesting. One of his foremen wanted a girl for a certain job. Of two applicants turned over to him by the employment department for review he picked out Susie as the girl that he wanted. The tests for their adaptability to that particular kind of a job had said conclusively that Jennie was the girl. The general manager saw his chance to test the value—not conclusive at all—of this foreman's judgment and of the test; so both girls were hired and put to work. In thirty days Jennie, whom the test said was the better adapted, was doing twice the work of the other girl.

They have not compelled the old employees to subject themselves to the tests, but they offer to give them tests with the privilege on the part of the old employee of having the result of the test buried if he wishes it. Forty of these older employees told the management that they would like to be tested to see if they were not round pegs in square holes. Those forty were tested for their adaptability for different kinds of work, since various exacting jobs at the General Electric Company call for different attributes. As a result of these tests each of the forty had his position changed, and without exception each one of the forty increased his earning capacity by quite a little after he had reached his stride in his new job.

These are just indications that the psychologist, while he has not yet scratched the surface of industry, has a real contribution to make to industry in cutting down the percentage of failures, in reducing labor turnover, and in increasing the contentment of the employee by getting him into the job which he can do well.

III. Scientific Management and Selling

During the war the industrial battle line lay with the production man. Now the sales managers have been moved up to the front. Their's is the fight and they have taken up the weapons of the production man. What have been the results of the application of the engineering point of view to sales management? It has meant analytical study of the market as never before. It has meant an analytical study of the products as never before. It has meant a study of trade channels, the development and adaptation of new products for old existing markets, the development of new markets for old products.

In my previous paper I used as an illustration the work that had been done in improving a razor blade by much the same method that Taylor developed high speed tool steel. It was an indication of the forward looking point of view of that company. Patents on that particular kind of razor ran out last year. This might have been a matter of considerable concern to a good many companies, but for several years previous they had been perfecting an improvement, studying their market and arranging their sales campaign so that when the patent ran out the volume would not be impaired. Their planning was so well done that they not only maintained their old volume, but had to build a new plant to meet the increased volume.

A. The Study of the Product

Frequently some simple idea is the one which capitalizes the best. The other day I was shown rubber overshoes, or galoshes as we call them up in our part of the country, with a fastening that has been for a number of years familiar on tobacco pouches. You pull it down and your shoe is open. A simple thought, a simple application, but what has it meant to an industry in which this year has been especially bad because we haven't had any occasion to wear galoshes? An officer of that concern stated that they have been so overwhelmed with sales prospects that it looked as though they couldn't catch up for three years and the thing has hardly got out on the market.

The leather and shoe business has been particularly bad. We feel it especially in New England. A new sales manager who had no previous experience in the shoe business came into one of our New England shoe concerns a while ago and started in on an analytical, statistical study of the facts of the business. He found that they were spending a lot of money advertising their shoes, that they were operating a lot of retail stores which handled their trade-marked shoes exclusively, but they were dependent still for a large part of their output on shoes without their trade-mark, sold to jobbers on the jobber's specifications—which is the way the shoe business is very largely done. Not being hampered by the traditions of the industry, this sales manager started in to ascertain the facts of the business. He found that there were 150 styles or combinations which they made for jobbers on which they could make a profit. He advocated what seemed to the entire organization the dangerous decision to decline to make anything except those 150 styles and combinations, and to offer those to jobbers with the retail price and the name of the company, not the jobber, stamped on the bottom. It was hard to convince the organization, but he got his way, and that plan worked out. So far as I know that is the only shoe concern that has gone through this year withou decreasing its production and without showing red ink figures. It was a formulation of a sales policy based on securing the facts of the business.

B. The Study of the Market

There has gradually grown a new conception of market problems which is evidenced by the desire to get at the real facts instead of going ahead on hunches. I have forgotten who it was who said that one of the seven deadly sins is the preconceived idea; certainly the experience of all of us in preconceived ideas, both as to management methods and as to selling, has cost us a lot of money. But the last few years have shown many interesting analytical and statistical studies.

I have a letter from the statistican of one of the large and conspicuously successful rubber tire companies. He uses for his sales department many statistics outside his business. From the returns from the Federal Income Tax a while ago he learned how many people receive salaries of $1,000 a year, how many $2,000, etc. Then he found out how many automobiles of various prices were owned, and how many were owned by people who kept two automobiles. His figures showed a surprising number of automobiles owned by people who couldn't afford to keep an automobile.

What were the conclusions? Roughly that there was a large part of the purchasing public who had to buy tires, who have automobiles that they can not really afford, hence have to buy a very cheap tire. So this concern started out to make a certain part of its output of those cheap tires which they knew from their statistical evidence were going to be purchased. On account of this sales policy they had just the edge on many other manufacturers.

C. The Evolution of Merchandising

The sales manager today is thinking more and more of merchandising his product. This is a new conception in selling. I was interested in the gradual evolution in the thinking of our own salesmen in one business that I am interested in, as revealed in a sales conference I attended in the Middle West this year. In all the discussions those salesmen were impressed with the fact that they must not only sell the jobber but also must think how to get the stuff from the jobber to the retailer and how to get it off the retailer's shelves. And they were all thinking in terms of merchandising the product so that it passed right straight through. We have been working for years to get our sales force thinking in those terms and it was extremely interesting to have it come out.

D. The Sales Budget

The outstanding tendencies, as I see it, in sales and distribution of the last few years are the use of statistics and the development of the sales budget. I was interested in an article[4] describing what the Dennison Company had done after the war in studying their sales problem, with a view particularly of bringing sales and production capacity into a balanced relationship. They are one of the few concerns that came through the war and the aftermath of the war with practically no lessening in sales volume. The Walworth Manufacturing Company has made somewhat similar studies and has tied it up with the business cycle and with the curves of statistical organizations, and has budgeted its sales in advance. An article published in the Taylor Society *Bulletin*[5] showed that in 1922 the twelve months sales volume was almost exactly what the budget had provided.

I had a personal experience that interested me recently. A year ago in November I had to take over a little business in which a certain community where I lived was interested, which was going to be sold through a receivership sale and might become a nuisance to us all. Not wanting to fuss with that business, I thought the best thing for me to do was to focus any experience and ability we had in industrial management right on that little business, organize it as though it were a little industry, tighten up all the loose ends and then turn the general financial supervision over to my assistant. We spent some time in its reorganization and among other things had made an itemized budget twelve months in advance. In fact this was made out before we got the business to find out whether we were buying a business which could make money or not, since it had been losing money up to that time. A careful budget of sales expectancy month by month, twelve months in advance from last November, and of expenses, departmentalized and divided with ample provisions for everything, showed that we could make perhaps a few thousand on the present basis of operation.

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[4] E. E. Brooks, Master Budgets of Sales and Production, *Bulletin of the Taylor Society*, Vol. VII, No. 6, December, 1922.

[5] Howard Coonley, The Control of an Industry in the Business Cycle, *Bulletin of the Taylor Society*, Vol. VIII, No. 4, August, 1923.

The manager of this establishment had never had any experience of that kind at all, and he and his accounting crew began to watch that budget. It became a non-financial incentive, and if they beat the budget they could not wait to get me the news of it.

That budget swung one side or another each month, but on the twelfth month it came out within $14.00 of its expectancy. That is just a coincidence, but so was Howard Coonley's twelve months budget which came out almost exactly. But it shows how the budget tells the story. We have the budgetary control in each enterprise that I am mixed up in—each budget for each plant made by its separate crew—and the accuracy with which they come out is almost uncanny.

E. Joint Research

In selling as in purchasing problems there are many opportunities for joint research. Those of you who adopt the policy that I have always adopted, of not hiring salesmen from competitors but training your own, know that you cannot always pick the right man, and you have to make an investment—and quite an investment—in many before you discover that they cannot be fitted for your work. The insurance companies have done much along this line, and since we are all poor prospects as insurance customers, insurance salesmen have certainly been well trained. But the insurance companies got together a cooperative fund which they placed at the disposal of the Carnegie Institute in Pittsburg for making studies covering the testing, selection and training of salesmen. I have understood that the insurance companies have gained a good deal from that, and that the Equitable, under their vice-president who was brought in from a teaching position in psychology, has had exceedingly good results. In the retail field, the Comptrollers' Congress, associated with the National Drygoods Association, has been one of the chief agencies in helping the retail drygoods stores develop sound selling methods.

E. Scientific Advertising

Statistical and research work is tremendously important in advertising, for advertising as a tool for selling has become ever more important. Advertising poorly done is tremendously expensive. The two great developments in advertising in the past few years, it seems to me, have been the tendency to truth, and the development of skill in making tests of advertising effectiveness.

One friend, a psychologist, who has given a good deal of thought and study to the effectiveness of advertising copy developed a series of tests of the efficacy of advertising matter. He applied his tests to the advertising copy of twenty large concerns, and then compared his conclusions with the actual performance of this copy, and he found his tests were 80 per cent accurate as to the effectiveness of the different kinds of copy. He is now making a study, with the aid of these tests, for a concern which during the first quarter of this year spent $35,000 in advertising a product which they had been selling for some time, but secured only $1,000 increase in sales. Now they have turned to see what applied psychology can tell them about that advertising material, so that they will get, if possible, 80 per cent of success instead of a fraction of nothing. If the validity of this method of testing copy can be established, it is going to increase sales efficiency.

I think we are going to see a gradual evolution in advertising. The way advertising is done now on a commission basis makes the advertising firms who have the greatest talent practically unwilling to give advertising advice or service to the man who does not have a large enough appropriation to give the agency a very real return. So the man who has from five to ten thousand dollars to spend on advertising—which he might spend very readily and fruitfully if properly advised—has no place to go to buy skill. I wonder if eventually advertising agencies and advertising advisors are not going to be on tap much as doctors and lawyers are, so that the moderate sized concern with a relatively small appropriation can get good advice in making that tool of selling more effective.

This sales and advertising drive, with advertising playing a larger and larger part in the cost of selling, together with the tendency of manufacturing to get low costs through quantity production seems to my mind to be pointing inevitably toward the larger consolidation of industry in this country. That tendency has already started in the textile industry. It is going on at a rapid pace in the automobile industry. Today 95 per cent of all the automobiles in the country are manufactured by thirteen concerns, and it is my guess that two or three years from now there will be fewer automobile concerns that there are today. I have seen the same tendency in rubber goods, in shoes and leather, in metal working, in woolen manufacture, and so on; and I think that with over-production, the keen competition for volume with the lowering cost is putting a premium on the best managed concerns. All this puts upon those who represent this school of management more and more of a burden to prepare for the problems which come with consolidation.

III. Control

There is just one other phase of management which I want to speak of, and that is the development in the clerical, statistical, accounting and control end of business. In the old days and today the unsystematized form of management gets off its balance sheet of assets and liabilities once a year. The systematized form of management gets off its profit and loss and balance sheets four times a year or monthly. But about all they know about it is a simple analysis of sales and production and costs. Today an accurate, current and dependable cost system in the hands of the sales manager is absolutely essential to help him in his stategy. There are times when he has got to have the courage to take work at cost when the other fellow does not dare to, but he must know it is cost and not below cost. The executives in business today want not only internal statistics for their internal management; budget control of sales, manufacturing and purchasing require that they have external statistics such as the tendencies of raw materials in the market, the variable demands of markets for commodities, the availability of financial and technical resources and changes in these; the availability of workers; restrictions or regulations imposed by government, and so on. The growth of the big statistical organizations is an evidence of the importance that people are attaching to this need of business.

As I foresee the tendency of business, competition for a great many industries is and will be very keen in the next two or three years—a life and death struggle for volume. There is going to be a tendency to consolidation through the failure of the poorer managed concerns. The one-man type of establishment with its low overhead will always continue, and in many cases will be a thorn in the flesh of the larger concerns. But one is not safe without taking a long look to the future; and in the long run, there is a premium put on scientific management. The larger concern of the future will need superior production methods to produce a dependable product and a dependable service at costs lower than its competitors; it will need superior selling methods to gauge the market, select proper channels of distribution and to search out and sell the consumer; it must have superior control methods—master plans, budgets, schedules of operation for a considerable period ahead, and detail independent schedules for selling, production and finance. The concern of the future needs to continue the development of the art and science of management. And if we are not going to have labor troubles and the economic waste of bad industrial relations, we must take a broad point of view in the handling of the human equation. With the broadening authority that comes from the growth of industrial enterprises there comes also a greater opportunity and a greater responsibility for making those enterprises agencies not only in producing and distributing their physical product better and more cheaply, but also in giving a wider opportunity for health, happiness, education, and progress for the many people employed and the communities which they support. In our organizations we try to feel that responsibility and are trying day by day to put more "happiness in every shop."

Management as an Executive Function[1]

Emphasizing Modern Biology and Psychology as Essential to the Development of a Science of Management

By JOHN H. WILLIAMS
Consulting Engineer, New York

THE meaning of the term Scientific Management is still in the making. It was coined by Taylor in the early stages of the public announcement of his application of the scientific procedure to management. It met a popular need to express the idea back of the beginning of a new era in management, and was broadly used by people with little or no knowledge of its meaning in the mind of the originator.

In the light of Taylor's own words, it seems to me to represent a personal expression of what he regarded as necessary to correct the deficiencies of the then existing social and economic status of industry. It is comparable in nature, though not in kind, to the present use of the terms liberalism and radicalism with relation to society at large, and is subject to as many different interpretations.

Taylor says, "Scientific Management . . . . . fundamentally consists of . . . . . *a certain philosophy which can be applied in many ways*[2], and a description of what any man or men may believe to be the best mechanisms for applying these general principles should in no way be confused with the principles themselves." He also says, "I want to tell you as briefly as I can what Scientific Management is. It certainly is not what most people think it to be. It is not a lot of efficiency expedients. It is not the printing and ruling of a lot of pieces of blank paper, and spreading them by the ton about the country. It is not any particular system of paying men. It is none of the ordinary devices which, unfortunately are going by the name of Scientific Management. It may in its essence be said in the present state of industry *to involve a complete mental revolution,* both on the part of the management and the men."

I have always felt that Taylor's selection of the term Scientific Management was unfortunate, because of its inevitable confusion, on the one hand with the science of management and on the other with the function of management, although neither of these latter terms expresses what he most often stressed in what he said and wrote. The absence of accepted terminology which sharply distinguishes these concepts is like a cross roads without sign posts, and has done much to befog an understanding of Taylor's work. Everything he did is clearly definable as either science of management or the function of management and these should be distinguished from his philosophy or state of mind, however much they affected his art and science. His selection of the term Scientific Management is not surprising, however, in that the development of his principles (a science of management) and of himself as an executive managing man (the art of management) had to go hand in hand, and against tremendous odds and misunderstanding, of which none but those who have attempted to pattern their work after his can have any appreciation. It was not unnatural that he coined a term which combined these distinct things as though they had been brought together. With the idealism of a revolutionist he hoped for the merging of the art and science of management, and was impatient of their mutual evolutionary development.

Mr. Oliver Sheldon, in an article in the December, 1923 *Bulletin of the Taylor Society,* refers to "the science of management of which we are beginning to hear so much," but denies the present validity of the term. He speaks of the existence possibly of a "science of bricklaying or a science of chocolate covering, but not a science of management," and goes on to say, "It is the science, the knowledge, the truth, the standards which the bricklayer has to learn. To achieve a science of management therefore, we have to apply the scientific method to the tasks of management, as distinct from the tasks of those whom the management controls. It is fundamental, I suggest, to draw a distinction between operative science (which management, of course, uses) and managerial science, where management itself is the operative"

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[1] Paper reproducing an address presented at a meeting of the Taylor Society, New York, Jan. 25, 1924.

[2] The italics are Mr. Williams'.

I believe that it is possible to define certain fundamental principles and rules which will ultimately be entitled to be called a science of management, and even to compile a handbook of standard mechanisms and means consistent with these principles. Taylor in his four principles and in the mechanisms and devices which he originated, went far in this direction, but I do not believe that we know as yet, (and I question whether we ever will) sufficient about man's emotional and intuitive faculties to define laws and principles adequate to constitute a "managerial science, where management itself is the operative."

Mr. Kendall last evening referred to his having spoken, in his earlier paper at the Tuck School Conference, of systematic management and scientific management as representing two different types of management. As I recall this talk, he gave an illuminating description of the distinguishing characteristics of each, but made no reference to the science of management as distinguished from Scientific Management.

The science of management, as I see it, has to do with the determination of the facts concerning the design, selection and operation of means to a given end—in other words, the facts bearing upon a problem of management; whereas management—whether systematic or scientific, whether of a manufacturing or merchandising business, whether of an institution or a government—if it is *management,* and not *the science of management,* is primarily concerned with expediency and leadership, however much it may be tempered by science or system. While every manager should seek to increase the element of fact in the basis of his judgments, the word management does not necessarily imply even a knowledge of the facts concerning the thing managed, and is without regard to effectiveness. It is often spoken of as an art and used synonomously with the executive function of administration. It is preferably used in connection with the direction and manipulation of units of activity, where there are a limited number of opposing objectives, as in a small or simple business or a department of a larger business.

The term administration as a policy determining function is usually exercised by a committee or board of directors, in which case it means something very different from management. Administration as an executive function, however, is very like management and connotes something very different from a science. It is preferably used in connection with the supervision and manipulation of opposing objectives existing in the management of several smaller businesses, or the various departments of a larger business. There is no legitimate difference between it and management except in degree and scope. Either or both may be characterized as systematic, scientific, humanitarian, ruthless or any other of a score of types.

Production is usually considered to constitute one branch of management and selling another, and the adjusting of the opposing elements in these and other branches of a business as still a third. The word management could properly be used to describe the function performed by a person charged with responsibility for production or sales or any other department of a business, or for all of the departments of a business where the business is small enough for them to be handled by one person. But when a business is so large that production, sales, purchasing, finance and other functions are each headed by separate executives, the function of the person charged with responsibility for supervising and manipulating these personalities and coordinating their responsibilities can best be described as administration.

The science of management, or management as a branch of engineering, which I believe to be a more desirable term, should be used by both managers and administrators to determine the facts upon which their policies and decisions are based, but its function as such should stop where the determination of facts ends and expediency begins. However far management as a science may encroach upon management or administration as an executive function through the development of facts bearing progressively upon problems as they arise, there will always be a plane on which the final determination must include things other than facts. If management as a science or branch of engineering hopes for recognition as such, this must always be the place where it stops and management or administration as an executive function begins.

In its present stage of development, management as a science or branch of engineering has hardly gone further than to deal with the mechanics of management, and it is not to be wondered that executives with broad and varied experience in management and administration, in their larger aspects of policies and personalities, resent the sometimes all-embracing counsels of those whose experience is largely confined to the mechanisms of management.

I think it is fair to say that Taylor was the first to collect and formulate the existing knowledge with reference to management into a comprehensive and logical body of principles and practice in any way entitled to be called a science, and for this he is entitled to be called the father of the science of management, although not of management as an executive function. The term Scientific Management implies a certain condescension toward the then existing stage of the art of management which I do not believe was intended by Taylor. His criticism was principally directed at the absence of scientifically determined facts as a basis for management.

When we speak of Darwin as the father of evolution, of Pasteur as the father of modern bacteriology, of Fulton as the father of steam navigation, or of Newton as the father of the law of gravity, we do not imply that they were the first to conceive of these discoveries, or that the last word was said by them. But we do give them credit for being the first to deal with these subjects in a manner sufficiently comprehensive, logical and practical to bring them to the attention of the world. This is the least that can be said of Taylor. In proof of this, I shall cite his "four principles" and show that, although they were developed largely with reference to production, they are fundamental to management in its larger aspects, as is proven by their having been generally adopted by industry at large.

Before referring specifically to the principles, it should be observed that Taylor not only formulated definite principles, but he developed a technique and actually drew all of the necessary forms and standardized the paper work required for their application. More than this, he gave an actual demonstration of all that he advocated in a going, competitive business. Had he done less than this, he would not have received either the recognition or the criticism which has been lavished upon him. The recognition is, I believe, due to the effectiveness of his principles and formulae, and the criticism to an assumption, unwarranted by the facts, that he considered them to constitute the sum and substance of management.

Taylor's first principle was the gathering together of all of the traditional knowledge which in the past has been possessed by the workers, and the classifying, tabulating and reducing of this knowledge to rules, laws and formulae. With reference to production this included roughly: 1, standardization and classification of stores; 2, maximum and minimum requirements of stores; 3, standardization and classification of tools and machinery; 4, product specifications; 5, job analysis and standard route charts; 6, worked material classifications; 7, forms and records.

This, as with all of his principles, is clearly limited to the facts of management and not the executive function. Its soundness is testified to by its counterpart presented by the services performed by the research and statistical department, now quite general in all phases of management.

A second step in his first principle was the development of a science for each phase of man's work, to take the place of the traditional rule-of-thumb method. With reference to production, this included roughly: 1, time study of unit operations; 2, standardization of operations; 3, operation instructions; 4, balance of stores. This has its counterpart in the statistical charts and formulae now almost universally used as an aid to executive judgments.

His second principle was the scientific selection, teaching, development and training of employees. With reference to production, this includes roughly: 1, standards for selection of employees; 2, schools for instruction; 3, standards and records for judging qualifications and efforts; 4, training of foremen, gang bosses, instructors and inspectors. While no reliable tests for the selection of executives have as yet been developed, there is hardly any university of standing that does not include a school of business administration in which it undertakes to prepare young men for the executive function. Is not this a general recognition of his principle with respect to the higher executive function?

His third principle was the cooperation with employees so as to insure all of the work being done in accordance with the principles of the science developed. Notice the use of the words, "the science developed." With reference to production, this includes roughly: 1, informing and educating owner, manager, foremen and employees with reference to plans and methods; 2, central planning and control; 3, comparison of work performed and time consumed with standard, and a bonus reward for satisfactory results achieved. The general application of this principle to the administrative function is easily recognized in the growing use of budgets and accounting methods to see that budgets are conformed to.

His fourth principle was the equal division of work and responsibility between management and labor. With reference to production, this includes roughly: 1, assumption by the management of full authority and responsibility for ways, means and records; 2, relieving workers of all clerical work; 3, determination of sequence and routing of work; 4, supplying workers with proper stores; 5, supplying them with proper tools. This is the forecast of the elaborate organization plans and charts and schedules defining duties and responsibilities, now generally in use in large concerns.

In his application of the scientific procedure to problems of management, Taylor not only gave us a practical beginning but he blazed the way for much that is to come. In this connection I do not feel that any discussion of the evolution and present state of management can be complete without reference to what I believe to be the next step—the inclusion in both the science and the art of management of the use of what has been recently developed in the closely related science of psychology. I do not mean by this what is commonly known by the word psychology, in the sense of the static process of introspection that was taught when most of us went to school, but rather, the fundamental principles of what is sometimes called "the new psychology," with principal reference to what it has to teach us regarding man, the principal factor in both the executive function and the science of management.

Mechanical engineering reached its present high state of development largely through intensive investigation of the materials with which it deals. It did not hesitate to use physics, metallurgy, and other sciences for this purpose. The management engineer has attempted to go forward on the information accumulated by the mechanical engineers, seemingly overlooking the fact that his principal material is man himself, concerning whom he has almost no knowledge.

Can you imagine a mechanical engineer working without a knowledge of physics? With all of his mechanisms, he would be in a pretty plight without a knowledge of the laws of the physical world with which he deals. Why then should we expect more of the management engineer with all of his methods, systems and controls, until he acquires a knowledge of the laws governing the behavior of man, the principal material with which he deals?

The hopeful tendency of today for management as an executive function, and the new and ever increasing opportunity for management as a science to be practiced by those adequately informed and trained for their task is, as I see it, in the rapid development of psychology as a science, and the beginning of its recognition by executives as a controlling factor in management. The growing tendency to consider man's probable behavior on the basis of experience, in place of reasoning according to prescribed rules for behavior, the increasing tendency toward the decentralization of authority, the substitution of clearly defined responsibilities for duties, the keeping of accounts in terms of cost and revenue growing out of responsibilities in place of arbitrary accounting terms—these are all evidences of progress in the right direction.

Whereas we formerly railed at what we chose to call unreasonableness and inconsistency in others, we are now coming to recognize, all unwittingly, but through a better understanding of the dynamics of man, that this unreasonableness and inconsistency is a natural result of differences in nature, environment, and opportunity, and can be adjusted only through changes in environment, opportunity and our own attitude, and that it cannot be adjusted through reasoning or punishment.

Most of us were brought up under the theological traditions of man's essential goodness or badness—the idea that, freed from external influences, man would be good or bad as the case may be. It was thought that he could be reasoned into gratitude, generosity or honesty, even in the face of all opposing influences, and great stress was laid upon the effectiveness of the spoken word. This tradition has done much to befog our understanding of his probable reaction to any given set of circumstances. In our dealings with each other, we have depended upon *reason*, very much as though it were a *law* controlling human action.

Modern biology and psychology teach that man is primarily emotional, that he is descended from primitive forms of life, and that his reactions are still influenced and modified by primitive emotions, such as fear, rage, hunger, and desire for comfort. They argue that because he was in a primitive state for millions of years, and has been a reasoning being for only a few thousand years, the first and most powerful influence upon him must necessarily be the old habit reaction of quick emotional response to the primitive fear, rage or love which each situation however subtly may suggest. Only secondarily and after control of his emotional reaction does he become subject to reason and the spoken word.

While these views regarding man's origin and his present state are by no means generally accepted as yet, they have shaken the foundations of the earlier beliefs. Executives are unconsciously beginning to study the probable reactions of those they direct, regardless of the reasonableness of such reaction. Whereas executives used to spend days over the reasonableness of their proposals, and what explanation they might make to justify their actions, they now try to forecast the probable reaction of those they direct, and to adjust things to meet these reactions. Strangely enough, the very men who yesterday flatly denied the theory of man's evolutionary heritage today use its standards in considering the probable reaction to their proposals.

An eminent student of the human mind is quoted by Walter Dill Scott in his "Influencing Men in Business" as saying that most persons never perform an act of pure reasoning, but all their acts are the result of imitation, habit, suggestion or some related form of thinking, which is distinctly below that which could be called reasoning.

Mr. Scott continues: "Our most important acts are performed and our most sacred conceptions reached by means of merest suggestion. Great commanders of men are not those who are best skilled in reasoning with their subordinates or most logical in presenting their truths. In moving and inspiring men, suggestion is to be considered in every way the equal of logical reasoning." And I may add that their unconscious ego and defense trends have now come to be recognized as even more important influences.

James Drever in "The Psychology of Industry" says: "From very early times, speculative philosophy has been greatly interested in that very group of phenomena which constitutes the social province of the science of psychology as we understand it. Thoughts, feelings, desires, emotions were looked upon as manifestations of the mind or soul, a substance quite distinct from the matter of which external bodies consisted. Many of the deepest and most momentous problems were raised by the relations of this mind and this matter to one another. Hence, one of the chief interests of philosophers came to be to interpret both in such a way as to satisfy the demands of the human reason on the one hand, and the needs of the human spirit on the other.

"Thus was created the atmosphere in which the 'old psychology' came into being. It was characteristic of this 'old psychology' that it was either deduced from the supposed nature of the mind or soul, or it was formed by the observation and selection of those facts of experience and consciousness which seemed to support a certain view of the mind or soul, or it was reached partly in the one way, partly in the other. In any case, the old psychology could not in strictness be described as a science. It was the battleground of contending philosophical systems. The truths generally accepted as established principles were submerged in the vast mass of controversial matter in regard to which some held one opinion, some another, according to the philosophical views which required to be supported. As a result, interminable disputes obscured the very real advances in psychological knowledge which were made. Such was without exaggeration, the position of psychology from the time of Plato or Aristotle, or even earlier, until the 18th or 19th centuries.

"It is the application of the method of science in the field of mental phenomena that has given us the modern science of psychology, the so-called 'new' psychology. The 'old' definition of psychology was 'the science of the mind or soul,' or 'the science of mental or conscious processes.' The 'new' definition of psychology is 'the science of the facts of human nature and behavior, or the science of human behavior in its relation to, and dependence upon mental process." There is, indeed, a strong body of opinion among present day psychologists in favor of defining psychology simply in terms of behavior. The new psychologist rightly holds that to define his science in terms of mind or soul is to define it in terms not of facts, but of an inference from facts which might be challenged, and is therefore, entirely illegitimate.

"This new psychology really made a serious start with the application of experimental methods some fifty years ago. A quarter of a century later, when experimental psychology had already made substantial progress, systematic efforts were begun to develop applied psychology in various fields. In all respects therefore, the history of the science of psychology has been that of the other sciences from the time when it first took shape as a definite science."

In his inaugural address to the first meeting of the Industrial Section of the British Psychological Society, in April, 1919, Charles S. Myers said: ". . . . recently another stage in the evolution of psychology has been reached by the systematic study of unconscious processes and of their relation to consciousness. Whereas the earlier philosophical psychology and the experimental school which arose from it, had been mainly intellectualistic, giving undue prominence to the play of reason, this later stage has been characterized by the emphasis it lays on the importance of instinct and the emotions, and by its devotion to the study of unconscious processes.

"As in the case of biology, the results obtained from experimental psychological methods, and indeed, those methods themselves, have begun to be applied to practical purposes—first to Education, next to Medicine, and most recently to Industry, thus creating three applied sciences, those of Educational, Medical and Industrial Psychology; and the British Psychological Society is now instituting three special sections of the Society which are to be respectively devoted thereto.

"Under the application of psychology to management, I include the consideration of the psychological causes of industrial discontent and restricted output, the psychological advantages of different methods of payment and supervision, and other conditions which affect the efficiency and happiness of the workers. During the last few years a flood of light has been thrown on the importance of the emotions and on the changes which they effect and to which they are subject. We now recognize how prone we are to rationalize, i.e., to give an intellectual reason for actions which are really prompted by emotional states, or by subtler influences which are unknown to us or which for good reasons dare not be faced. We now recognize that in order to avoid causing excessive self-depreciation, an emotion may undergo a process of 'projection.' Thus instead of reproaching ourselves, we may attribute the reproach to others; hence arise delusions of suspicion and even persecution. Or, for the same purpose, an emotion may be 'inverted,' e.g., shyness becoming concealed by an affected boisterousness, the desire for a person of the opposite sex by aversion, submissiveness by defiance. We understand now more fully the psychological basis of worry and anxiety, the importance of their early treatment, and the psychotherapy of the functional nervous disorders to which, if unresolved, they may give rise. The application of such new advances to the problems of industrial unrest is sufficiently obvious."

I feel that this modern view of man strikes definitely at the barrier which has stood in the way of the development of management as a science. The tendency, whether conscious or unconscious, which I see among executives, to accept the findings of modern biology and psychology as a basis for dealing with man, is the most hopeful sign of the day, not alone for the future of management and administration but for the whole social order.

AMID the waters, blown stormy by the blast of all these forces, management stands at the helm of industry. Labor may bring about a change in its composition and relations; Science in its methods and materials, but neither can change its functions. The man at the wheel may be replaced, may be put under a new authority, may be regarded differently by the crew, and may work with different instruments in a different way, but the functions performed remain constant, essential under every conceivable circumstance. It is important, therefore, that we should devise a philosophy of management, a code of principles, scientifically determined and generally accepted, to act as a guide, by reason of its foundation upon ultimate things, for the daily practice of the profession. The adoption of this or that principle in this or that plant will avail but little. Management must link up all its practitioners into one body, pursuing a common end, conscious of a common purpose, actuated by a common motive, adhering to a corporate creed, governed by common laws of practice, sharing a common fund of knowledge. Without this not only have we no guarantee of efficiency, no hope of concerted effort, but also no assurance of stability. (Oliver Sheldon, *The Philosophy of Management,* p. 284).

BOTH for training and for the movement of personnel, the existence at the head of the educational system of the factory of an enlightened and far-seeing administrator, who realizes the extent to which his system of training can affect the whole management of the business in the future, is an invaluable asset. Next to the training of foremen, the training of clerks of the new order will be his most important task. The training of the clerk, indeed, so that he may take his legitimate position in the ranks of the highly developed system of management which is growing before our eyes, is a necessary and practical recognition of tendencies in industry which promise to make a highly trained and broadly educated staff indispensable to efficient administration. (Oliver Sheldon, *The Philosophy of Management,* p. 279.)

Tendencies in Sales Management[1]

A Consideration of the Influence of the Scientific Management Attitude of Mind on Selling and Advertising

By **STUART COWAN**
Cowan, Dempsey and Dengler, New York[2]

I. Scientific Analysis of Marketing Problems

THERE is convincing evidence to support the conclusions of prominent executives that, by necessity of increasing competition, a closer approach is being made each year to the application of the scientific management attitude of mind to marketing problems. The following extracts, chiefly from letters from prominent executives, should be of interest:

Charles M. Schwab, Chairman of the Board, Bethlehem Steel Corporation: One of the greatest problems before the country today is that of distribution. We have brought production to a high degree of perfection, but a great deal remains to be done in developing economy in distribution. I am convinced that facts and figures gained through research are essential in solving our sales and advertising problems . . . In the Bethlehem Company we are constantly endeavoring to discover new ways and means of economizing in getting our products from the factory to the consumer.

Says Mr. Schwab in an address before the National Automobile Chamber of Commerce: The most striking fact which producers of automobiles must face today is that in spite of the low level of manufacturing costs, 40 per cent of the shop cost has to be added to put the car into the hands of the consumer . . . The chief problem of the automobile industry today is to reduce this cost . . . To reduce the price at which motor cars can be sold, every element of cost in distribution must be carefully examined, and wherever possible eliminated or reduced . . . Indeed, a bold courageous, and business-like attack upon this problem will do more to add to the health of the automobile industry, to reduce the price of automobiles and thus increase their use, and to give satisfaction to the ever increasing automobile-using public of the world than any other step that could be taken. The world takes off its hat to Henry Ford for his reduction in the cost of manufacture. But no individual can effectively bring about a substantial reduction in the cost of distribution. That must be accomplished by the earnest, cooperative effort on the part of every factor in the industry.

William Robert Wilson, former president of The Maxwell Motor Corporation, who has also been associated with Westinghouse, Dodge Brothers, and the Irving National Bank, makes some interesting observations: I believe that a tightening competition in many fields is driving executives to more and more analytical work as a basis for their decisions . . . By analytical work I mean not only the preparation and study of statistics but commercial research in the field as to buyers' wants and buyers' psychology, and a challenge of the means of distribution . . . Of course, all of this is nothing more than common sense applied to business in place of the "Prima Donna" with his brilliant hunches and his imposed personal intuition. In the manufacturing side of business the application of this idea has produced remarkable results through time study, motion study, straight line operations, personnel work and the coordination of design and production . . . the success that has resulted is, I believe, naturally leading the minds of executives to apply the same principles in the field of merchandising where during the next few decades there are some remarkable results to be attained.

A. C. Ernst, whose personal experience has covered financial, commercial and industrial enterprises over a period of twenty-five years: The tendency on the part of sales executives is very decidedly towards replacing impressions with knowledge, conjectures with reasons . . . This movement towards acquiring more exact knowledge is being accelerated by reason of the fact that business executives recognize that competition is becoming keener and in the next few years the law of "the survival of the fittest" will govern in business . . . Scientific analysis has taken the place of guess work . . . The advertising appropriations of progressive concerns are no longer made on what someone's guess is as to how much can be afforded for the purpose, but rather are based on what is necessary and prudent in the light of all the facts that can be obtained on such essential points as extent of market, potential buying power, plant capacity and distribution.

Otis A. Glazebrook, Jr., Vice-President and General Manager of Finance and Trading Corporation: It is apparent that the situation demands increased sales effort, and at the same time a closer coordination of factory manufacturing schedules with estimates of sales volume, and the latter, to be of real use, must be based upon a thorough and comprehensive study of market possibilities . . . the successful sales executive in 1924, as contrasted with the moderately successful sales executive of the same period, will be that sales executive who can best appraise the possibilities of his market and correctly determine the most economical methods of obtaining the greatest possible volume of sales. Any effort by the sales executive along these lines will be dissipated, however, unless the premise upon which he proceeds is developed from the application of fundamentally sound methods of establishing quotas, and is derived from the best sources of research that may be open to him . . . The old days of "hit and miss merchandising" or consistent sales volume built around personal friendships and good fellowship are gone forever . . . Standardization of product and concentration of sales effort along the lines of intelligent and analytical study of markets, based upon facts and not theories is today just as essential to the sales executive as standardization of factory procedure and attendant scientific research is to the production executive.

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[1] Paper presented at a meeting of the Taylor Society, New York, January 25, 1924.

[2] At the time of the presentation of this paper Mr. Cowan was a member of the J. Walter Thompson organization.

B. E. Hutchinson, Vice-President and Treasurer of the Maxwell Motor Corporation: Budget control is necessarily based upon careful estimates of sales volume . . . Under competitive conditions the dependability of sales estimates is therefore subject to close scrutiny and in executive conferences the facts used in preparing sales schedules receive careful study . . . They must know the degree to which the sales program is based on established facts, on special sales analyses, and what allowance to make for personal opinion and variable conditions . . . an appreciation of the value of sales analysis, systematic sales planning, and frequent comparisons of sales results with expenses has become a primary consideration in the decisions of progressive executives who are responsible for the successful conduct of large scale industrial operations. . . Business men are in sympathy with the sound developments in the advertising field during the past decade. They will welcome further developments which center the interests of advertising men more definitely on sales volume and net earnings.

As a further check on the conclusions of competent observers, I wrote to a number of representative advertising agencies, asking these two questions: (1) Do you observe a tendency for sales executives to reject rule-of-thumb methods and personal opinion and study *existing facts* more carefully? (2) Do you notice a growing interest in or demand for special research work to disclose *new facts* as a basis for more careful planning and more thorough control of sales and advertising? The answers to the first question was "Yes;" to the second question, "Yes," with qualifications. Extracts from these replies will be quoted later.

In his important paper presented to this Society in 1922[3], Dr. H. S. Person suggested the probability of a long-run buyer's market possibly extending over an entire decade; that, while the general economic trend would be marked by up-swings and down-swings, the underlying characteristic for a period would be an excess of supply over demand in many lines with a resulting buyer's market which would make previous competition seem mild.

A digest of various forecasts for the year 1924 seems to show that prospects are such as to warrant confidence rather than enthusiasm. Apparently 1924 will be a year of fair business with varied conditions as between different industries, a year during which business will move forward at a level not far from the normal line, if that level represents an activity part way between boom and depression. Certainly it would seem wise to accept Dr. Person's conclusion and assume that satisfactory sales and profits can be obtained only by a careful appraisal of marketing difficulties and scientific management of the selling activities.

At times marketing problems seem highly complex as compared with production problems; there are variations in conditions so numerous and so marked as to make scientific precedure appear hopeless. That these problems are tremendously complex we must admit. But we must also admit that, except in a few instances, these matters have not received the degree of careful study which has been devoted to production and financial subjects.

To illustrate the complexity of market analysis, consider a person such as yourself as one buying unit. In any one year he buys and uses thousands of different articles. As a consumer he fits into a certain buying group determined by income, occupation, or other valid standards. He buys from stores of different classes and of different types; for example, a grocery store of Type A or a hardware store of Type B. As a purchaser he is counted in a city or town of a certain size which belongs in a particular population size-group. His home is on the map in a definite geographic area. He has a considerable number of fixed wants and from time to time he acquires new wants. He has certain established mental habits subject to moderate change. He possesses a given number of human instincts and, according to Dr. John Watson, has three basic human emotions.

You can thus define a person such as yourself as one individual prospective buyer of certain products—one consumer in a mass of 106,000,000.

How does an article which he buys reach him? What influences are active all down the line, step by step, from the time the product is conceived and made until the moment when his money passes over the retail counter? If you will list these steps for a single purchase you will have a clear visualization of the intricacies of selling:

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[3] "Shaping Your Management to Meet Developing Industrial Conditions," *Bulletin of the Taylor Society,* Vol. VII, No. 6, December, 1922.

—the many questions involved in creating or designing a product;

—the interplay of fact and judgment in organizing the general marketing plan;

—the activities of the sales and advertising staff at headquarters;

—the job of selling the wholesaler and his organization;

—the handling of the product by the wholesaler;

—the sales work on the retailer and his employees;

—the transaction between the retailer and the wholesaler;

—the handling of the product by the retail store;

—the development of consumer demand or consumer desire;

—the final transaction between the buyer and the retail clerk.

A. The Total Market of the United States

We can classify the total market of the United States according to the types of purchasers and products, as follows:

1. Consumer purchases
2. Commercial purchases
3. Industrial purchases

In consumer purchases we may include all products or services bought by the 106,000,000 consumers, or 24,000,000 families, whose total yearly income is slightly in excess of $60,000,000,000—the purchasing and renting of homes, fuel and light, clothing, food products, furniture, automobiles and automotive supplies, household equipment, miscellaneous services and miscellaneous commodities.

In commercial purchases we may include those products used by some 2,000,000 commercial enterprises—such purchases as accounting and stationery supplies, typewriters, filing cabinets, office furniture, adding machines, telephones, a substantial part of the automobile delivery wagons and trucks, and hundreds of other products. Commercial buyers may be divided into eight general groups. The total number of concerns in each group and the number which may properly be classified as "well-rated or well-established" are given below. The number of "well-rated" or "well-established" concerns refers to those which are large enough to be regarded as a promising market for products sold for business use; the standard adopted for each line of business was chosen with reference to the characteristics of that type of business.

Group	Total Number	Well-Rated
Wholesalers	117,194	38,616
Retailers	1,313,609	65,101
Banks	31,330	12,762
Financial (other than banks)	13,331	6,986
Insurance and Real Estate	92,887	16,207
Public Service	40,321	5,151
General	413,018	23,397
Government	30,815	12,404

In industrial purchases we may include parts, materials, equipment and supplies bought by some 300,000 industrial concerns. There is great concentration in that market. Statistics show that 10,413 firms, 3.6 per cent of the total number, have an output of about $43,300,000,000 or 68 per cent of the total, whereas 152,925 concerns rated under $20,000 have a total output of only $1,113,000,000, or 1.8 per cent of the total.

It seems wise to confine our attention in this paper to the market for consumer products. However, most of the principles presented can be applied to the study and development of the commercial or the industrial market.

B. Volume of Consumer Trade

One of the first things to be done in studying any marketing problem is to identify the prospective buyers of the product. While the necessity of doing this is generally recognized, new applications of such studies are constantly being developed. Some recent developments in this field of sales analysis will be treated in the second part of this paper. At this point, however, I should like to remind you of the marked variations in annual income and buying power. By dividing the total annual income of about $60,000,000,000 by 40,000,000 individual income receivers, we have an average annual income of $1500. But 14% of the income receivers who get $2000 a year or more, average $4285 apiece; 47% of the earners who get from $1000 to $2000 a year, average $1340 apiece; and 39% of the earners, getting less than $1000 a year, average only $628 apiece. These figures refer to the income of the individual; there is an average of 1.6 income earners per family; and the number of earners per family is undoubtedly greater in the second group than in the first, and larger in the third group than in the second.

The following table gives the distribution of personal income for the year 1918 in more detail and is included as a matter of possible interest:

Income Group	Income Receivers	Total Amount of Income
Under - $500	1,828,000 (5%)	$ 685,288,000 (1%)
500- 1,000	12,531,000 (33%)	9,818,679,000 (17%)
1,000- 1,500	12,498,000 (33%)	15,295,790,000 (27%)
1,500- 2,000	5,222,000 (14%)	8,917,648,000 (15%)
2,000- 3,000	3,065,000 (8%)	7,314,413,000 (13%)
3,000- 5,000	1,383,000 (4%)	5,174,090,000 (9%)
5,000-10,000	587,000 (2%)	3,937,183,000 (7%)
10,000-25,000	192,000 (1%)	2,808,290,000 (5%)
25,000-50,000	41,000 (——)	1,398,786,000 (2%)
Over-50,000	21,000 (——)	2,469,555,000 (4%)
All groups	37,369,000(100%)	57,819,722,000(100%)

Various studies have been made of the way in which the consumer's dollar is divided between various types of products — food, clothing, rent, etc. Such studies, however, are based upon certain sections of the population and many variations from any such general analysis exist; these variations are exceedingly important in any given problem. Hundreds of manufactured products purchased in large volume are salable only to a small percentage of the 25,000,000 families.

A few facts on the sale of luxuries taken from Babson's summary of the Bureau of Internal Revenue reports for the year ending June, 1921, may be of interest:

Automobiles and accessories (excluding trucks)	$2,512,000,000
Cigars, cigarettes, snuff and tobacco	1,740,000,000
Beverages (non-alcoholic), ice cream, etc.	830,000,000
Admissions, dues, etc.	950,000,000
Candy	715,000,000
Jewelry, watches, etc.	490,000,000
Pianos, organs, etc.	460,000,000
Sporting goods, cameras, etc.	185,000,000
Carpets, trunks, etc. (taxed excess value)	200,000,000
Fur articles	181,000,000
Perfumes and cosmetics	150,000,000
Toilet soaps, etc.	148,000,000
Chewing gum	88,000,000
Fire arms and shells	75,000,000
Sculptures, paintings, etc.	15,000,000
Electric fans, portable	10,000,000
Yachts, motor boats, etc.	7,000,000
Hunting garments, etc.	4,000,000
Cigar and cigarette holders, etc.	3,000,000
Livery and livery boots	3,000,000
Total	$ 8,766,000,000
Forward	8,766,000,000
Gasoline, auto repairs and garage rent	1,500,000,000
Luxurious food	1,500,000,000
Luxurious services	1,000,000,000
Other luxuries—pleasure resorts, races, etc.	1,000,000,000
Total	$ 5,000,000,000
Combined Total	$13,766,000,000

C. Population Size-Groups

The distribution of the consumer market by population size-group is also significant. It has been found that 31 per cent of the families live in 144 cities having over 50,000 population; 12 per cent of the families live in 602 cities of 10,000 to 50,000 population; 9 per cent of the families live in 2,042 cities and towns of 2,500 to 10,000 population; 9 per cent of the families live in the very small unincorporated towns under 2,500 population, of which there are 12,905; 39 per cent of the families live in the country.

While many commodities sell in volume to all size-groups, for most commodities the methods of appraising and developing these fields usually require individual study.

D. Channels of Distribution

We may list five principal methods of distributing the product from factory to consumer:

1. Manufacturer to wholesaler to retailer to consumer;
2. Manufacturer to retailer to consumer;
3. Manufacturer to chain store to consumer;
4. Manufacturer to consumer by mail;
5. Manufacturer to consumer by salesman or agent.

We find, for instance, a total of 6,900 wholesalers distributing to 335,000 retail stores; 900 wholesale hardware houses distributing to 33,500 retail hardware stores; 680 wholesale druggists distributing to 50,000 retail drug stores. In addition we find roughly 100,000 automobile dealers in accessories, garages, repair shops; 4,800 department stores; 40,500 dry goods stores; and more than 150,000 general stores.

It is interesting to note the variation in type or grade among stores of a given class. Of 232,000 retail groceries only 33,000 are rated at $5,000 up and only 5,477 at $20,000 up, while 150,000 have no rating whatever. Of the 33,000 retail hardware stores less than half, or about 14,500, are rated at $10,000 up. Of the 50,000 drug stores only 1,500 are rated at $10,000 up. Of the 4,811 department stores, 1,368 are rated at $125,000 up. Of the 40,000 retail dry goods stores, 4,219 are rated at $50,000 up. Of the 151,000 general stores, only 31,254 are rated at $10,000 up.

It sometimes develops that a sales executive can gain operating advantages by separating his principal classes of trade into certain more or less arbitrary types such as A, B and C and checking the degree of concentration. Almost invariably he will find that a small percentage of the total number of outlets represent a large proportion of the volume. This situation in some instances has an important bearing on the sales, merchandising and advertising policies.

With the pressure on the part of the owners and management for additional volume, with the growth of progressive retailers, and with keener competition, there is a tendency in some lines for manufacturers to sell their entire volume or a substantial part of their volume direct to the retailer. This development must be analyzed carefully by the man responsible for sales plans.

Manufacturer to chain store to consumer is, of course, the same basic method as manufacturer to retailer to consumer. It is listed separately because of the large volume now done by chain stores and the surprising rate at which this business is growing.

In 1910 there were 19 grocery chain stores in New York City; in 1914 there were 40 and in 1922 there were 1,499. In 1910 there were 392 grocery chain stores in New York State; in 1914 there were 544 and in 1922 there were 3,739. In 1910 there were 942 grocery chain stores in the United States; in 1914 there were 1,083 and in 1922 there were 19,905.

Selling by mail to the consumer includes not only selling from the factory but also the sale from the factory to the mail order house such as Sears, Roebuck & Co. and thus to the consumer. The total volume of mail order sales is probably between $500,000,000 and $1,000,000,000.

Manufacturer to consumer by salesman or agent has been developed in a very interesting way during the last few years. The business of the Fuller Brush Company, reported to be in excess of $14,000,000 a year is, of course, a striking example. Several manufacturers of vacuum cleaners, facing the difficulty of securing good retail representation and effective house-to-house canvassing by the store's ~~retail~~ salesmen, have obtained a large volume of business by this plan. Hosiery, underwear, subscription books, magazines, and countless other articles are sold successfully by this method. The total volume of business so handled probably amounts to several hundred million dollars a year.

E. Master Planning

Since the subject of master planning has been exhaustively treated in other papers before this Society, we may simply mention the relation of selling to it. Given the job of keeping a factory operating profitably at capacity throughout the year, obviously sales volume is the first requirement.

The factory may have a single product, a variety of products, or a line of products. This has a direct bearing on the whole subject of master planning. In any case, however, the need for close cooperation between the financial division, the sales division, and the production division is the starting point of a sound plan.

Since the production division and the financial division must know, in order to lay out their work, the total volume of sales and the subdivision of volume by lines and by months, the decisions of the sales division are the primary ones. Other plans must necessarily revolve around and depend upon the sales program.

After each division has done its own analytical work and developed its own plans, these plans will inevitably be in conflict at certain points. Only by close cooperation can a decision be made as to which sacrifices involve the minimum cost and the maximum gain.

The financial vice-president of a large enterprise said recently: "If we could know six months in advance what our production in total and by types would be within 15 per cent, and if furthermore we could determine those facts thirty days in advance within 5 per cent, we could make a larger net profit on 20 per cent less volume."

A large manufacturer in another industry making over 2,000 private brands found that he could either double his profits or give better value, and so strengthen his competitive position, if his sales manager could shift the production to a standardized line of factory brands.

Clearly, situations such as these can be worked out only by the open-minded and cordial cooperation of the three primary divisions, under conditions where each division manager is actuated by a sincere desire to consider all of the facts affecting his associates as well as himself, and cooperate in a group decision which will promote the net earnings of the business as a whole.

F. The Value of Sales Analysis Now Recognized

Broadly, the selling problem involves such questions as these: what to make; what type of product and at what price; what features are desired by the public; what service will make a strong appeal to the public or to the trade; what volume can be sold; will the profits be satisfactory; will the business be permanent.

More narrowly, the selling problem is to work for a set quota at a definite cost, to earn a predetermined profit.

Let us divide that work into four functions:

1. Analysis and research.
2. Planning, including preparation and scheduling.
3. Actual selling and advertising campaigns.
4. Control; through records, supervision, investigations and other methods.

I am going to emphasize sales analysis and research and consider it in detail; if the sales analysis is correct, the efficiency of all other sales functions is at once raised to a higher level.

We have many indications that today more than ever before manufacturers are carefully studying available facts, and that a considerable number of manuacturing, merchandising and advertising organizations are spending much time and money to discover new facts as a further guide to their decisions.

You may be interested in the comments of a number of important advertising agencies on: (1) Better use of existing facts; (2) Discovery and use of new facts:

Barton, Durstine & Osborn, New York City: Sales executives are undoubtedly "studying existing facts more carefully" than heretofore. The period of depression following the war and the keen competition that we are now seeing have made this necessary . . . We cannot say that we have noticed a "demand for special research work." Of course there is more commercial research work being done each year. Executives seem more ready to accept the idea of commercial research and possibly more willing to study the results, but there is no "demand" . . . Although many sales executives are studying existing facts and a constantly increasing number are accepting the thought of commercial research, they are still the minority. We in the advertising agency business come in contact only with the most progressive sales managers and even of these the number who are seriously studying facts and demanding commercial researches is not large.

The Corman Company, New York City: My answer to both questions is an emphatic *yes*. There simply isn't any question about it—the modern advertiser who takes his expenditure seriously and thinks of it in the same terms as he thinks of money invested in other business directions, wants to proceed on the basis of ascertained facts . . . One of our clients said to me recently: "We are spending a half million dollars for you in advertising. I think it is good advertising. Our business is growing. Possibly we shouldn't complain, but let's spend five or ten thousand dollars finding out more about our competition, our standing and all of the related facts to our enterprise" . . . That is the point of view that we are running against every day. It is also the point of view that we are trying our best to encourage with clients. Fairness prompts me to say that not only are many operating in the dark, but many are suspicious and unhappy when an intelligent fact-finding program is outlined. But there can be no question about the general tendency. It is all in one direction—the right direction—finding facts.

D'Arcy Advertising Company, St. Louis: The day of the "rule-of-thumb" methods and personal opinions has gone by. Never before has there been such a general over-turn of accepted practices and customs, in the reckoning of sales opportunities and in the application of the efforts of sales and advertising organizations to realize their proper quota of business . . . What I have said above would apply here. The main problem confronting the manufacturer, operating through his sales and advertising executives, is to lower his cost of distribution. Many factors enter into this, some of which are beyond his control, but he certainly requires the use of careful research work and investigation to find out what are his responsibilities and how he can better the existing practice. He must know more about his market and the application of his goods to the consumer's need. He must learn the way to reduce wastage in sales and advertising effort and thus increase the return per dollar invested. Any research along these lines will be well repaid.

The Erickson Company, New York City: We cannot speak for sales executives, but in advertising agencies of the modern type a study of existing facts is looked upon as a necessary preliminary to any preparation of an advertising campaign . . . Research work is engaged in nowadays so commonly as to be regarded as standard practice in connection with general advertising. Its importance is recognized by advertising agencies and advertisers alike.

Erwin, Wasey & Company, Chicago: In a general way we can answer your two questions affirmatively. You may quote us to that effect.

Charles W. Hoyt Company, Inc., New York City: The very basis on which we operate is indicative of the trend to reject "rule-of-thumb" methods and personal opinions in sales and advertising, and of the growing interest in or demand for special research work to disclose new facts as the basis for more careful planning and control.

The H. K. McCann Company, Cleveland, Ohio: We do observe a tendency for sales executives to get into more adequate study of existing facts and conditions. This tendency is reflected in a number of ways . . . (1) A very marked increase in the activity of our own research departments at our various offices; (2) Several clients have organized to study facts and conditions more definitely through the addition of statistical people and research experts; (3) We note a pronounced increased interest on the part of many of our clients in adopting and using reports and bulletins of business and statistical organizations, such as Babson, Harvard School of Business Administration, etc. . . . We do notice a growing interest in special research work. More attention is being paid to analysis of local conditions throughout the marketing field, and accordingly to varying sectional effort in sales and advertising.

Joseph Richards Company, New York City: Yes, we do notice a growing interest in this preliminary to the formation of good advertising plans. Business research suffers today from a milder form of the same sort of suspicion that libelled advertising twenty-five years ago. Just as we then believed in the potential force of advertising as a business builder, so we today believe that business research will become the greatest single factor in making advertising results certain and profitable.

Frank Seaman, New York City: There are, of course, many types of sales executives, and it is a matter of constant and continuous amazement to the writer that some *apparently* successful sales executives achieve satisfactory and even noteworthy results, in spite of the fact that their actions are based on hearsay, prejudice, "hunches," and other methods more or less related to what you probably have in mind under the term "rule-of-thumb" methods . . . It is our impression, however, that this type of sales executive is on the down grade, and is being replaced by the type of sales executive who feels that he is up against a serious problem in which there are a number of basic elements which can be studied, and on which helpful facts can be collected. It is our belief that there is a definite tendency to reject personal opinion and prejudice and to approach the problem of selling very much as a scientific investigator approaches a problem in technical research . . . There is no question but that this interest in, and demand for, research work is growing. A few years ago there was no such thing as commercial research work. A recent investigator found some sixty concerns that were doing commercial research work of various types.

From another substantial New York advertising agency: There can be little question of an increasing demand for more exact information on which to base selling (and advertising) campaigns. It seems to me, however, that this demand comes almost entirely from younger men—men who are not bound by the traditions imposed by past successes in the days when selling consisted chiefly of finding a market rather than really "selling" it against competition . . . A truthful statement of present tendencies must give both sides of the picture. In some organizations "rule-of-thumb" methods still obtain, and in organizations headed by younger and "more progressive" men, there is an obvious desire for scientific fact-finding. As evidences of the success of the newer school multiply, the rush to enlist will become more pronounced, but in the mass, mankind is conservative, and waits until pioneers have shown the way . . . Agreeing that competition promises to become keener and keener with the passing of each year, I look for greater and greater interest in the technique of selling and advertising. I believe that advertising men, with the necessity born of their work to seek fundamental principles, are as a class considerably in advance in their study of this technique.

II. Scientific Planning of Sales Activities

A. Mass Selling Requires Scientific Methods

Advertising has by some been misunderstood and misjudged. In the old days advertising representatives doubtless contributed to this misconception. Much harm was done by them. More recently, as better men have entered the advertising profession and acquired a background of experience and judgment, and as business men have come to regard advertising as an integral part of business development and have studied the matter with an open mind and analytical judgment, great and important changes have come about. In fact, the advertising agency field has made more progress during the past ten than in the previous fifty years.

In this connection I should like to quote from Mr. Stanley Resor's recent address to the American Association of Advertising Agencies. After commenting on the economic changes from 1870 to date, he continues:

> It seemed as if all the factors needed for limitless expansion of the market were there—population, output, transportation, and a standard of living mounting higher and higher.
>
> But then a strange thing happened. The factories began to make goods faster than they could be sold. In spite of the enormous market, distribution and selling failed to keep pace with production. The old method of personal salesmanship on articles of general consumption had broken down.
>
> The manufacturer of a cake of soap, a typewriter, a pair of shoes, discovered that if the growing output of his factory was to be sold, he must find some way to number his customers by millions instead of by thousands—to persuade a whole nation to buy. A market with unequalled spending power lay ready, but it must be told how and where to spend.
>
> It was certain that this could not be accomplished by the mere addition of personnel. His salesmen had no access to those who consumed his goods. By the time his own salesmen, the jobber, the jobber's salesmen, the retailer, and the retailer's salesmen had each passed along his story, it had lost most or all of its point.
>
> In the face of these obstacles how was the manufacturer to get his story to the public?
>
> Fortunately, a solution lay at hand. Manufacturers began to find in magazines, direct mail, and display, a means to carry their message direct to millions of consumers; and they found that the newspapers, which went daily into every home in the country, could also help to open for them this entire market. By using these means, the manufacturers found they could sell to *millions* more economically than through personal salesmanship alone they had been able to sell to *thousands*.

> Today the problem is, how can this great force of advertising be intelligently used? How are we to meet this problem?
>
> The amount of study or knowledge needed for solving these problems cannot be over-estimated.

The Data and Plan Form which one of the leading agencies has used for seven years as a guide in handling analytical work contains some twenty-two pages and raises for consideration more than six hundred questions. The introductory note indicates its purpose:

> Before formulating the marketing plans for any product it is necessary to ascertain definite facts about the product, the market, the trade, the organization and competition. In some cases a complete analysis is necessary. In other instances a brief survey is sufficient.
>
> It is the purpose of this outline to indicate the relationship of facts in detail so that a particular problem may be approached with an intelligent comprehension of the entire situation and a complete knowledge of all the possibilities.
>
> No attempt can be made to apply the entire list of questions to every business, but the general arrangement of facts can be of greatest assistance in guiding the work.
>
> It is merely as a guide to clear thinking, not as a needless formality, that this outline is used.

Similar guides to thorough analytical work are now used by a number of agencies, and work of this type is now being done by a surprisingly large number of manufacturers and other organizations.

I should like now to touch briefly on the primary position of advertising in the marketing of consumer products. While comparisons are never strictly accurate, it does seem that advertising might well be regarded in the same light as machinery and plant equipment. Just as a modern clothing factory can make 1.4 suits per man per day, whereas the old-fashioned tailor, working by hand, needed a week to make one suit, so advertising makes it possible for the individual salesman to sell a larger volume at a lower cost. The factory workman certainly makes the suit of clothes, just as the salesman gets the order signed, but the plant equipment and machinery make it possible for the workman to achieve his amazing efficiency, just as advertising, properly planned, changes conditions and creates a new situation in which the salesman can achieve results which otherwise could be had only at higher cost, or, in some cases, could not be obtained at all.

When you think of the tremendous enterprises which have been built up without a single salesman, solely by advertising, you will agree, I believe, that advertising as a business force is not open to question. Think of the hundreds of millions sold by mail. Think of products like Woodbury's Facial Soap for which druggists disburse more money than for any other soap, although no personal sales pressure is used; or like Pepsodent which has reached a volume close to eight figures without salesmen; or Cutex which was in a weak position in 1915 after the salesmen had secured 75 per cent distribution, but at once started to grow when the funds were used for newspaper advertising and the goods moved out of the retail store. In fact, scores of successful concerns might be cited which have built volume by mail or through the trade without salesmen or with a minimum of sales activity. Since advertising has proven itself, under certain conditions, as the direct source of volume and profits, the only question open in an individual business is how advertising can be engineered into the operations of that business and what results can be obtained.

Fundamentally, advertising is a simple business force. It should be stripped of the complexities and exaggerations which at times have entered into advertising discussions. For basically advertising is simply selling—selling to the mass instead of selling to the individual. The factors entering into successful advertising are now well recognized. While there is much room for important advances in the science and art of advertising, the fund of facts and experience now in existence is considerable. More and more, advertising problems are being handled along engineering lines. Progressive advertising men as well as business executives consider the fact-finding work quite as important as the creative work. In case after case they have seen that facts can be of astonishing value in stimulating, guiding, and improving the quality of creative work.

Perhaps the most common objection raised by the business man who has not experienced the benefits of sound advertising is: "Advertising may be all right for those concerns; my business is different and I do not see how advertising could possibly help me." If we will only approach this question with an open mind and a willingness to judge advertising by the results it has produced, we shall find that this objection in almost every case lacks validity.

Two comparisons may illustrate that point. Engineers regard electricity as a force rather than a method, a force which can produce an almost unlimited variety of results, from lighting a small lamp to driving a battleship or turning the machinery of a great industrial city. Obviously, a fundamental force such as electricity has many applications. Since scientific management is a group of principles, not a set of methods, it, too, has an infinite number of applications, ranging from the organization of a small factory employing perhaps twenty-five people to the Ford industries employing one hundred thousand, from the manufacture of a toilet product to the production of heavy machinery.

So with advertising. It can serve many different uses, of which a few may be listed:

1. To do 100 per cent of the sales job, as in selling by mail or selling such products as Woodbury's Facial Soap and Pepsodent;

2. To create in the consumer's mind a desire for or interest in a product, the sale of which is completed by the dealer; for example, U. S. Rubber overshoes and Raynsters; Hart, Schaffner & Marx clothes; or White Motor trucks;

3. To place a requirement on the salesman which will force him to increase his personal sales ability, and at the same time to interest and partially sell the buyer; for example, the G. T. M. campaign of the Goodyear Rubber Company, which features the engineering service the sales representative offers the buyer, and the Fuller Brush Campaign, featuring the suggestions which their house-to-house salesmen will give the housewife;

4. To promote standardization and gain widespread recognition among the public and the trade for the advantages inherent in a standardized line of products as compared with a line offering almost unlimited variation, but a lesser value and other disadvantages. The Blackman Company has prepared an effective campaign for the Sherwin Williams Company built around the Household Guide which shows the right finish for each surface, a plan designed to improve manufacturing conditions as well as to strengthen the company's distribution and its competitive sales position;

5. To develop good-will as in the case of the American Telephone & Telegraph Company;

6. To give general publicity to a product or an organization as was done by many concerns during the over-sold period of 1919-1920.

Looked at in a slightly different way, advertising may be used for one of three general purposes:

1. To create new users, as for example, the campaign on O'Sullivan's Rubber Heels which featured freedom from fatigue and other evils, caused by constant pounding on hard leather heels—a pioneer job in creating a great permanent market;

2. To gain for one competitor a larger percentage of a total market; for example, the advertising of Veedol and of Tydol gasoline;

3. To cut into a new and rising market. Frequently social and economic conditions carry a new industry forward on a great wave of popular interest; for example, the amazing growth of the automobile industry from 1910 to date, and the astounding growth of the radio; in markets such as these, advertising can be so built into a business as to insure it a permanent strong position in a new and rapidly growing industry.

B. Research and Experiment in Advertising

Research and experiment with respect to details of advertising policy and technique have been conducted in many places and by many individuals or agencies in increasing number, and could the aggregate results be brought together in one paper the exhibit would be surprising. A few examples will be illustrative.

Some years ago, Mr. James W. Young tested a theory that many women did not read the copy for a certain product because they were already familiar with the product by name and so merely glanced at the page and turned it over. He proposed to the client that a conclusive test be made to find out whether they could not sell more soap if the logotype displaying the name were omitted. Accordingly, a test was made; 1,000,000 copies of a woman's magazine were printed with the display; then the plates were shifted and 1,000,000 copies were printed without the display. Both plates were keyed. Result—about 30 per cent greater volume of inquiries from the copy with the display omitted.

Recently a similar test was made on a breakfast food. The same procedure was followed with a woman's magazine having a circulation of 1,800,000. Although returns at the moment are incomplete, the advertisement without the display is pulling a considerably greater volume of inquiries.

Under certain conditions this principle is of vital importance. A real difficulty, however, is encountered when the manufacturer's pride in his product makes him unwilling to follow purely editorial style. Obviously, the omission of display is not a policy which can be followed generally. It can only be applied under special conditions which must be clearly understood. It represents, however, a fine example of the clean, thinking and careful testing which advertising men practice.

Some years ago the makers of a drug product wanted the bottle featured as a main illustration with copy extolling the merits of this product. The agency disagreed and proposed a competitive test. They prepared the two test advertisements and both were run in the same publication, with no seasonal inequality, and with the client's choice having the advantage of first appearance. The editorial or selling copy outpulled the display or product copy ten to one.

Other facts available from experience suggest the comparative appeal of charging for a sample as compared with offering a free sample. One campaign on tooth paste which offered a sample and booklet for ten cents produced very small results. The same style of copy offering a sample tube free and a booklet has produced from 6,000 to 9,000 inquiries per page in women's magazines. On a direct comparison, where the headline, illustration and copy were the same, the only difference being the free offer, the free sample outpulled the other thirteen to one.

An exact comparison of the relative pulling power of color advertising and black and white advertising was made in the case of a food product. The records show the number of requests for a booklet. In one magazine color pulled 9 per cent additional; in a second magazine 360 per cent additional; in a third magazine, 194 per cent additional; in a fourth magazine 126 per cent additional. The black and white requests came from December and February advertising. The color page appeared in January. The appeal of the copy except for the color was the same in both cases.

These are but illustrative of a type of experiment now being utilized. Professor Daniel Starch of the Harvard Graduate School of Business Administration has been and is conducting some most interesting laboratory experiments which correlate closely with actual commercial tests. You will find an interesting exposition of some of these in his article, "Testing the Effectiveness of Advertisements" in the July, 1923, *Harvard Business Review*.

Recently a most interesting investigation has been made of the Cincinnati market to check the character of national magazine circulations; a report of this investigation will constitute the second part of this paper.[4]

C. The Primary Sales Idea

Perhaps the most important use of facts from the creative standpoint is the development of what might be termed the "primary sales idea." By the phrase we mean that selling thought which has a strong personal appeal to a large proportion of the prospective buyers.

For example, in studying the market for an electric cleaner, research men learned that 70 per cent of the women were *chiefly* interested in sanitation, in getting all the dirt out of rugs and draperies, whereas only 30 per cent were *chiefly* interested in other features: 11 per cent in the ability of the cleaner to pick up threads and lint, 7 per cent in the saving of labor and 12 per cent in other points. Obviously some news story on the ability of this device to produce unexcelled sanitation would register with a large majority of the prospects.

In studying the market for corn plasters, it was found that liquid remedies which featured quick relief represented 70 per cent of the total volume, that probably three buyers would be *primarily* interested in stopping pain in one minute to one buyer who would be particularly interested in the safety and purity of the product. This fact, of course, gave the basis for a primary sales idea.

It is on this creative phase of advertising and selling that study and special research work are especially important. A fairly good presentation of a sound, primary sales idea may accomplish good results, but the presentation of a sales idea, no matter how perfect, which appeals to only a small fraction of the market may result in failure.

You have previously noted the comparison of advertising to machine equipment in manufacturing. That referred to the ultimate effect of advertising in creating a constantly growing and steadily repeating volume of sales. This is, of course, the primary purpose of advertising and the way in which advertising yields the most benefit to the salesman. In the narrower sense, however, advertising can be used by the salesmen to excellent advantage, either to get distribution or to strengthen dealer cooperation. Sales managers, advertising managers and agency men have displayed surprising ingenuity in this type of work.

D. The Use of a Primary Sales Idea in Selling the Trade

The case which follows shows that the use of a primary sales idea is quite as effective in selling the trade as in selling the consuming public. It is important to bear in mind, what is obvious to anyone at a moment's thought, that the primary sales idea for selling the public is by no means the primary sales idea for selling the trade.

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[4] To be published in the June issue of the *Bulletin*.

A manufacturer of cocoanut, the largest in the field, had built a good volume through various channels but his distribution to the grocery trade was not thoroughly developed. In preparation for consumer advertising he scheduled an intensive distribution campaign. The first results were disappointing; only about one out of seven dealers interviewed was sold. The dealer would say to the salesman, "What, you trying to sell me cocoanut? See all that cocoanut on the shelf? I have had that stuff for a couple of months. It doesn't move. There is no call for it. I'll sell you cocoanut cheap. You can take it away with you!"

Analysis disclosed the resistance: The independent grocer carries 1,500 to 1,700 items; the chain store 600 to 900. A list of these items in order of volume shows butter leading with about 12 per cent and cocoanut near the bottom with a small fraction of 1 per cent. This resistance blocked the salesman. A new appeal to the dealer had to be found.

The sales manager and agency man, confronted with that problem, found a solution which appeared surprisingly simple, once it had been worked out. Checking over his mother's grocery slips, one of these men found frequent purchases of six items—butter, canned milk, eggs, sugar, flour and lard. Added up, these six items made about 50 per cent of her grocery bill. He later verified this with wholesalers and retailers. Then he asked his mother her recipe for cocoanut cake—so much butter, so many eggs, so much milk, a quantity of sugar, a quantity of flour. He also obtained her recipes for other cocoanut dishes. His plan had begun to shape itself in his mind.

From that beginning came this sales appeal: The salesman lays before the dealer a striking sales portfolio and says: "Here are some new facts on the grocery business. We checked sales in ten stores similar to yours. I don't know whether you ever bothered to figure it up, but the average store sells nearly 1,700 items; 1,694 of these are only half of your business. The other six—all big sellers—make the other half. Those six items mean as much to you as the other 1,694. Here they are (showing picture of store and the six big sellers)—butter, milk, eggs, sugar, flour and lard."

Then he continues along this line: "Now here's something you may laugh at. But wait for the facts. We contend that cocoanut could be one of the best salesmen in your store. Sounds funny, doesn't it? But look at this picture (showing a luscious cocoanut cake in the natural colors). Isn't that a beautiful cake? Make's your mouth water, doesn't it? Well, we are starting now to advertise that cake to three out of every four families here in your neighborhood. Also delicious cocoanut pies and puddings. I would like to taste that cake; so would you; so will they. These people who buy their groceries here from you or from your competitors will want to eat these tempting things. Now when Mrs. Jones makes a cocoanut cake here is what she uses (showing exact quantities of butter, milk, eggs, sugar, and flour). That is why cocoanut can be one of your best salesmen. Stop and think of the other items she must buy to make her cocoanut cake, her pie, or her pudding. Here is the advertising for your store and here is the big consumer campaign."

During the talk the salesman covers his company—age, size, prestige; his product; his advertising for the consumer, for the dealer; and his proposition. In seven cases out of ten he gets the order. That is not the record of a few men; it is the average of over forty men. Nor is it the record of a short-time drive; it is the average maintained over a period of months.

E. Other Examples

Other equally convincing examples of this improved plan of selling might be cited:

—how ten salesmen stocked two thousand eight hundred dealers with a new cheese in fourteen days;

—how a crew working the drug trade on a test campaign with a new specialty never before sold by druggists obtained only three orders after 124 interviews and then by this plan closed 50 per cent of the dealers called upon;

—how the bread sales of a large baker were increased 35 per cent in one month;

—how tires and brake-lining have been sold and new records established;

—how the Sun-Maid Raisin salesmen have sold the bakers of the United States "Two Saturdays in Every Week;"

—how a large New York department store was sold a trade-marked line of women's clothing, the first time in twenty years this manufacturer had a New York store carrying his goods with his label.

F. Some Principles of Sales Training

These examples, we feel, prove the truth of certain principles:

1. That it is a planning function of the sales department to develop by analysis and experiment the one

best sequence of ideas for a complete sales story, to prepare a vivid pictorial presentation of this sequence, and to prove in advance of any instructions to the sales force that the sales story will get orders.

2. That it is a joint function of sales planning and sales production to exercise those qualities of leadership and that teaching ability which will enable the men to know what to do and how to do it. How to make the sale is fully as important as when, where, and at what cost. How this joint function of leadership and teaching is carried out depends upon the personality, experience, and ability of the sales executives in a particular organization.

3. That it is a function of sales production to exercise control and sympathetic supervision over the salesmen, to know by good records and intimate personal appraisal what is actually happening in the field. Moreover, the man responsible for sales planning should participate in this function so that he can constantly or periodically improve the method.

A word of explanation may throw some light on this question. To appreciate the resistance a salesman faces, one fact must be kept in mind. The buyer faces hundreds of thousands of salesmen each year—a surprisingly large number as checked and added up. He knows from experience that he will buy only from a few salesmen, so when your salesman calls, the buyer looks on him as one of the mass, takes a defensive position, and seizes the first opening or excuse to say "No, I'm not interested." When he first sees your salesman, he may unconsciously think to himself, "How can I get rid of him?" When the salesman starts to talk, the buyer watches for his opening. Frequently the salesman gets into difficulty by stating his proposition too soon. Then the buyer gives some plausible reason why he should not buy, or gives no reason but refuses the proposition. Time and again the salesman is thrown off the track at this point by combating the stated objection. He wastes his time and energy trying to break down the artificial resistance. But if the salesman simply says, "Yes, sir, I'll come to that in just a moment," and goes on with his story, he can frequently present his chain of ideas in such a convincing and interesting way that the buyer forgets his artificial objection. It is surprising to find how this method simplifies the problem of closing. We hear much about "good closers," the "knack of closing." With the right story, well told, with force tempered by tact and humor, closing becomes much simpler. Of course, different types of men must be closed in various ways. The variations are too numerous to touch on here but with a basic plan that is sound, an intelligent salesman born with reasonable imagination, ingenuity, and humor can work out these minor questions.

During the last two or three years more than 1,000 salesmen trained according to this plan have produced results considerably in advance of sales obtained by the same type of man without this sort of training. Fundamentally this plan involves two elements.

1. To discover some hidden self-interest of the buyer which is deeper and stronger than any motive he reveals to the salesman and to capitalize that human contact in molding his decision.

2. To recognize the fact that possibly 85 per cent of the buyers are "eye-minded," in the sense that their inner thoughts take the form of mental pictures, and to appeal so forcefully to the eye as well as the ear that all statements are vividly photographed on the buyer's mind.

Put this question to the average salesman—"When you enter a dealer's store what does he want to know?" The salesman will probably answer—he wants to know, "Who I am, what firm and product I represent, whether it will sell and how much he makes." Most salesmen feel these are the primary things to cover. They cover these questions with the buyer and make or lose the sale on this basis.

As a matter of fact, the dealer conceals his real interest. He does not let the salesman look behind the scenes of his mind. He never shows his strong inner desires. We know, however, the average man is more interested in himself, his business, his bank account, his family, his home, his future and his competitors, than in any of the points mentioned above.

That fact gives us the clue to this new method of appeal to the dealer's emotion. If the salesman will simply brush aside commonplace sales talk and make a contact with the buyer's self-interest, he can then talk to him in a sincere and convincing way about things which mean most to him in his daily life. From that start the salesman can proceed by a gradual and logical story to the point where the customer is ready to buy.

In selling this way the salesman has a great advantage when the high spots of his story are successfully visualized by striking illustrations, large type headlines, and condensed statements. With a well-prepared sales portfolio he keeps the buyer's eye on the visual presentation while he pours the story into the buyer's

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ears. The latter's imagination follows step by step. His self-interest is stirred, and he sells himself by suggestion as he is carried along by his own imagination.

Let us contrast this method with the usual way and note the important differences. Usually the salesman states his proposition and then piles on one argument after another. By the newer method, the salesman reverses the process. He starts with the buyer's self-interest and tells a human news story. He shows the direct connection between some strong desire in the buyer's mind and the product he is selling. As he unfolds his story, he plans to cancel 90 per cent of the ordinary objections before they are ever raised.

Ordinarily the salesman must combat objections and often may win the argument but lose the order. Much of this can be avoided when the buyer's mind and the salesman's mind proceed step by step from the buyer's self-interest to the purchase.

This plan of selling does not require the salesman to memorize a standardized or "canned" sales talk. On the contrary, the training of men by this method recognizes the individuality of each man, and the individual salesman is expected and taught to use the words which come to him naturally.

Objections may be raised that the best salesmen succeed because they can analyze each individual buyer. Many good salesmen say that when they meet a buyer they judge by the size or shape of his head, or the color of his eyes what type of a man he is, and decide how to handle him; that each is different and must be sold in a different way. We find, however, that results run on the law of the average. Part of the time they call the turn right and part of the time, wrong. Naturally they are pleased by their successful attempts and remember them, and forget unsuccessful ones.

Extensive experiences show that on the average human nature is much the same, and the difference between individuals is not nearly as great as the degree of likeness. But differences are striking and interesting. They call attention to themselves and cause discussion. Similarity, on the other hand, does not stir up interest and does not provoke comment.

It has been proved in working with hundreds of salesmen that the likeness between buyers can be regarded as a fundamental law and applied in the training of salesmen. If the progressive sales manager, after careful experiment and sustained effort, will develop that chain of ideas which represents an ideal sales story and then train his men to follow that plan —each man, of course, in his own individual way—results should far exceed the orders booked when each salesman tries to analyze each buyer and change his story to fit.

In passing I might mention one more striking fact. In a large manufacturing plant in the Middle West doing a volume of about seven and a half million dollars, twenty-two men devote their entire time to the management of production (analysis, planning, preparation, scheduling, control)—whereas only seven men, including minor executives, are engaged in the corresponding management functions for the sales department. Generally speaking, management of sales seems to be undermanned as compared with the management of production. There appears to be a trend among executives to recognize this unsound condition and take steps to correct it.

G. Selection of Salesmen

Adequate consideration of the selection and training of salesmen would make a complete paper; therefore in the few minutes remaining I can make only a passing reference to this important topic. Is it not evident that the developments cited give a new meaning to the selection and training of salesmen? The "one best sales story" is a result of research and experiment, and it involves planning a basic method of sales. The salesmen, therefore, must be selected with respect to their ability to comprehend the basic method, and their ability to utilize it in personal contact with buyers. It is no longer a matter of selecting a salesman because he has had sales experience—which may mean many different things—but because he has an ability to drop or modify old sales habits and adopt new ones suitable for the particular campaign.

III. Executive Responsibility

It is evident also that the newer methods of distribution call for sales executives who have a combination of imagination, go-getter ability and engineering ability. The working out of a sales story with respect to each item requires research ability inspired and directed by imagination. The selection and training of salesmen require scientific methods, imagination and power of inspiration. The direction of salesmen in the field from a central office requires leadership in the fullest sense of the word, for the sales manager must lead from a distance; his personal contacts and control are less continuous and intimate than those of other executives.

We should recognize also the responsibility of the president and general manager for the sales activities of his company. Many instances might be cited of enterprises which have failed during the recent depression for one or more of these three reasons:

1. Because the chief executive did not understand and was not particularly interested in the selling problem.
2. Because he did not appreciate that a strong overhead sales organization, though it might involve considerable expense, would be an excellent investment; that high-priced men of unquestioned ability, when judged by results, represent a true economy.
3. Because he did not take advantage of competent counsel or did not cooperate with the recommendations submitted by his advisers.

This paper has attempted to consider certain aspects of the newer sales management which indicate a tendency on the part of those responsible for distribution to approach their problems with the mental attitude of scientific management. The extent of this tendency may be indicated by a specific reference to principles enunciated by Taylor. Is there not shown a tendency toward:

1. The conduct of sales operations on the basis of facts determined by research, analysis and experiment—the substitution of scientifically determined and relatively certain plans and methods for relatively uncertain "rule-of-thumb" methods?
2. The selection and progressive training of salesmen on the basis of ability to comprehend the fundamental sales strategy and methods which express it—to comprehend and carry out specific plans?
3. The assumption by the sales manager of a larger share of the responsibility for selling through such means as analyzing markets, planning campaigns, discovering primary sales ideas, devising suitable methods of personal salesmanship in accordance with them, and trying out and proving these methods in advance of a campaign.

Student Branches

ORGANIZATION of a student branch at the Wharton School was perfected for the present year at a meeting, January 23. Forty-one members were enrolled. Percy S. Brown of the Corona Typewriter Co., Vice-President of the Society, addressed the meeting.

After mid-year examinations, activities were resumed with the following speakers at meetings:

March 20, Walter D. Fuller, Secretary, Curtis Publishing Co.

March 26, Grover Cleveland Fox, of the Farm Journal.

Other speakers scheduled include Morris L. Cooke, Edward W. Clark 3rd, Dr. Theodore J. Grayson, and H. S. Person.

The Industrial Management Club of Ohio State University reorganized in January on a basis similar to the organization of a business concern.

The elective officers of the Club consist of a President, First Vice-President and a Secretary-Treasurer, elected for one year. These officers appoint three more Vice-Presidents. The duties of the officers are as follows: President, General Executive Duties; Secretary-Treasurer, Secretarial and Financial Work; First Vice-President, in charge of periodical and publications; Second Vice-President, in charge of membership; Third Vice-President, in charge of speakers and programs; Fourth Vice-President, in charge of luncheons and dinners.

The offices are now held by C. S. Pearce, President; R. K. Brown, Secretary-Treasurer; M. J Stanley, First Vice-President; H. B. Teter, Second Vice-President; R. F. Knipfer, Third Vice-President; G. D. Gray, Fourth Vice-President.

The club holds monthly dinner meetings at the Ohio Union with an address and discussion. Recent speakers have included Mr. Craiglow, General Manager of the D. A. Ebinger Sanitary Manufacturing Co., Columbus, Ohio, on January 31, on "Mistakes of Business in Relation to Labor," and Franklin J. Kunze, Production Manager, American Multigraph Company, Cleveland, on March 7 on general business problems.

News of other student branches will appear in later issues.

Business Cycles and Unemployment[1]

A Recent Study of the Cycle and of Measures Taken by Various Firms to Avoid Its Influence

A Review, by WILLARD E. HOTCHKISS
Director, National Industrial Federation of Clothing Manufacturers

AN EDITORIAL that appeared in *Collier's Weekly* under the caption "Dangers of a Little Learning," on December 8, 1923, expresses a fairly typical body of opinion. Its language is as follows:

> Have we really gotten as far as H. G. Wells hopes since our superstitious ancestors consulted oracles and sought signs? Oracular minds now dwell on the danger of attempting anything when business statistics are not ranged in rainbow peaks. It is difficult to imagine Harriman breathlessly awaiting the latest Federal Reserve Board report, or James J. Hill and the elder John D. guiding their footsteps by the cool, steady light of the Harvard Economic Service. If the 1924 presidential election could be held tomorrow, Henry Ford might win by a huge popular majority. If he did so, it would be because people value the man who does not wait on changes, but makes them. Have the master minds really figured that out?

A stronger individualistic slant is reflected in a comment by a member of a prominent New York engineering firm apropos of the plan for creating an unemployment fund recently inaugurated in the Chicago men's clothing industry:

> I suppose the underlying theory is that the manufacturers pass the tax along to the consumer anyway. I am afraid I am not much of a booster for many economic practices, and the same reasons that compel manufacturers to contribute to paternalistic schemes in the interest of employes could conceivably be applied to the government. Now I think we all know that the last suggestion is impractical and as the plan diminishes in magnitude it becomes practical only because men of sufficient grasp can be found who can swing it. The real question in my mind is why people should not provide their own unemployment funds.

Professor John R. Commons, reviewing the volume now under review here, in the November-December issue of the *American Review*, approaches the picture from quite a different angle:

> What is needed in the public psychology, as much as anything else, is to get away from the individual standpoint and take the class standpoint. When we begin to look at the business man from the class standpoint then we will not so greatly admire the business man who has wisely unloaded on other business men, but will ask, What becomes of the latter and of the wage-earners in their factories?
>
> When we look at things in this way, then we shall be more willing to do the things necessary to stop these cycles of prosperity and depression. We shall then begin to realize that both the short-time depression and the long-time trend towards depression are likely to result from the preceding inflations, and shall be more willing to adopt the methods necessary to stop the inflation, notwithstanding the outcry that we are "killing prosperity."

In many matters of public concern we have the same problem of the modernist and the fundamentalist that confronts the churches. There is encouragement for the modernist in the thought that most of our worries are over things that never happen. In any case, whatever we may ultimately do about the business cycle, studying it is a matter in which moving appears clearly preferable to standing still. Advancing our knowledge by scientific inquiry will probably promote wise policy more rapidly than abstract speculation about the rightness or wrongness of business acts or omissions. As long as we move in the path of science we are likely to move safely.

Moving in the path of science means adjusting policy to the conditions to which it is applied, as these conditions are revealed by pertinent facts accurately ascertained, carefully analyzed and correctly interpreted. Analysis and interpretation must, of course, take account of human as well as material facts. A scientific approach requires competent statistical and technical service but it requires still more the direction of a socially minded intelligence. It is a truism to say that the social factor has come to be generally recognized as one of the most difficult factors with which business policy has to deal.

From this standpoint there is no task to which trained and socially minded intelligence can be more fruitfully addressed than to an effort to stabilize business and employment. The end towards which the study of business cycles and unemployment is directed is one with which informed opinion must find itself in complete accord. Conceding the rightness of the end, the value of the study depends upon its effectiveness in promoting that end.

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[1] Reports and Recommendations of a Committee of the President's Conference on Unemployment including an investigation made under the auspices of the National Bureau of Economic Research, McGraw-Hill Book Company, New York, 1923, pp. xl, 405.

The volume is made up of a Foreword by Herbert Hoover (2 pages), the Committee Report and Recommendation (24 pages), and 389 pages devoted to an investigation by the National Bureau of Economic Research.

The Committee makes it clear that it has approached the subject primarily as a business problem. Its recommendations cover the following fields: Collection of Fundamental Data; Larger Statistical Service; Research; Control of Credit Expansion by Banks; Possible Control of Inflation by the Federal Reserve System; Control by Business Men of the Expansion of Their Own Industries; Control of Private and Public Construction at the Peak; Public Utilities; Unemployment Reserve Funds; and Employment Bureaus.

In explaining the necessity for collecting fundamental data the committee urges especially the need for data from individual concerns showing the rate of production of physical units, stocks on hand and in transit, trend of prices, volume of sales, trend of money rates, speed of freight movement, statistics of employment. The use of such data assembled in impersonal form is emphasized by the fact that the prevailing impression early in 1920 was that scarcity of available goods necessitated placing orders far in advance, while in the summer of 1921 it was commonly believed that stocks exceeded demand. In both cases the reverse of general belief was true.

The recommendation for larger statistical service includes improvement and standardization of work now being done, speeding up publication, telegraphic reports for publication within ten days, concerning stocks and production of raw wool and cotton and their textiles; hides, leather and shoes; iron and steel and their leading fabricated products; zinc, lead and copper with leading products, and bituminous coal.

Following the example of research in physical science an expansion of economic research in business concerns is recommended, this to supplement the statistical work of the government and to be itself supplemented by encouragement to disinterested research by universities and research foundations.

In an introduction to the Report of the National Bureau of Economic Research, Dr. Wesley C. Mitchell, who had general charge of the investigation, points out that because of limitations of time, size and scope, the report is not an exhaustive treatise but rather "a reconnaissance survey, run quickly through a wide territory, in the hope of enabling the social engineers to locate the most promising routes for the construction of new highways." He also explains that it was necessary to secure the cooperation of those most familiar with the various detailed problems, and emphasizes the large share they and the organizations with which several of them are connected had in the investigation.

As would be expected under these circumstances, the report is essentially a group of monographs by different authors rather than an integrated and closely knit piece of research. Individual monographs vary in value because of variety not only in the kind and quantity of available material but likewise in outlook and workmanship. The monographs are grouped under three captions; the Relation of Business Cycles to Unemployment, Cyclical Fluctuations in Employment, and Proposed Remedies for Cyclical Unemployment. Since the arrangement does not appear to have been dictated by any definite logical principle, comment will perhaps be most profitably addressed to such of the individual chapters as appear to call for special mention.

Chapter I is a masterly condensation to 14 pages of Dr. Mitchell's authoritative work on Business Cycles. It is a chapter the content of which every thoughtful business man should make his own.

Chapter III, by Dr. Mitchell and W. I. King, attempts to estimate the economic loss from business cycles, based upon index numbers of physical production made by E. E. Day and W. W. Stewart. This comparison shows that the worst years run 15 per cent to 20 per cent behind the best and 8 per cent to 12 per cent behind the moderately good. The authors are careful to emphasize that their calculations do not cover intangible economic and social strains nor do they take account of possible compensating effects of fluctuations in stimulating progress and efficiency.

The value of Macaulay's chapter on Individual Industries is chiefly by way of suggesting some avenues of approach to such study by the statisticians of particular concerns. Persons familiar with the industries covered will recognize such limitations in the data as to preclude drawing conclusions from them.

The group of chapters on stabilizing business contains some new material but they are valuable chiefly for having assembled various approaches to stabilization in such a way as to show the extreme complexity of the subject when viewed from the standpoint of business in general and its great difficulty as a problem for particular industries. As is illustrated by Dr. N. I. Stone's study, wise management of individual concerns can greatly reduce the perils of the business cycle for both the business and its employes. Prompt availability of significant information enables a concern to keep ahead of the business trend. Finding the means of anticipating the cyclical valleys of production and even of levelling up seasonal valleys, is a task in which large calibre management can use foresight and business sense to combat the blind operation of economic law.

All these studies of stability from the standpoint of the individual business merely emphasize the fact stressed by the Committee Report mentioned above, that the business cycle presents primarily a problem in business administration rather than in public policy. As such it must be attacked through stimulating the desire of business men to control fluctuation, through raising the level of management, through improving tools of control, and through learning how to use these tools with greater wisdom and skill. Knauth's study of Statistical Indices, the study of Stabilizing Devices by a committee of the Federated Engineering Societies, and Miss Van Kleeck's chapter on Charting the Course of Employment, discuss some of the available control implements.

Perhaps the most valuable study of employment from the statistical angle is the one by W. I. King on Changes in Employment from January 1, 1920, to March 31, 1922. Records were secured from employers who hire about one-tenth of all the employes in the United States. It was found that the decline for all industries represented about one-sixth of the employe-hours put in at the peak. The variation between trades ranged from a slight increase for hand trades to drastic declines in factories and substantial declines in mining and construction. Possibly the least expected result of this study was the relatively greater decline in employment for the larger as compared with the smaller concerns. The study also reached the conclusion that reduction of unemployment due to part time work was of comparatively slight importance for industry as a whole. Dr. Brissenden in the chapter on Under Employment considers this subject more in detail but the fragmentary character of his data did not permit any very definite or significant conclusions.

Other valuable chapters on employment are the one by Dr. Leo Wolman on Unemployment Insurance and one by Shelby M. Harrison on Employment Offices. Harrison emphasizes the need of a system of employment offices national in scope. Otherwise the study is largely a catalog of different types of agency, showing their respective limitations and dangers. It would be valuable in this connection to have a careful study of the question of suitability of employment from the standpoint of craft, of proximity to the homes of workers and other considerations that affect the value of employment service to the less mobile types of workers.

The most timely element in Wolman's valuable study of Unemployment Insurance is the careful analysis of English experience. Contrary to much popular comment, Wolman reaches the conclusion that English experience is definitely encouraging, and that under test of the most adverse possible conditions the act has justified itself.

The chapter on Financial Devices of Control by Dr. T. S. Adams discusses briefly and in a style to make the discussion readable and attractive to the layman, various proposals looking towards the better adjustment to the phases of the business cycle of credit among banks and in the Federal Reserve System, also credit granted by banks to business men. It is a chapter which, like Mitchell's chapter on the Nature of the Business Cycle, may well be pondered by all business men who seek a more intelligent understanding of the economic forces that condition their operations.

Dr. Adams' chapter ends with a conclusion which serves equally as a fit conclusion to the whole study. It is as follows:

> A review of the financial devices for controlling or mitigating the severity of business cycles which have been proposed, leads to the conclusion that there is no simple device which it is reasonable to insist shall be employed by business men or by bankers for the purpose in view. As we approach the crest of a boom in any particular trade or industry, it is desirable that buying and commitments should be reduced, and that to this end credit accommodation to that trade or industry should be restricted. Such action, to business men and banker, represents not only their self-interest, but their public obligation. But they must first know, with that degree of precision and certainty required for business action, that the trade or industry in question is actually approaching the crest of a boom. The ways and means of controlling credit—financial devices, in short—are thus subordinate to

knowledge of the cycle. The clearest duty of business man and banker is to assist in the development of more accurate cyclical statistics. Plot the phases of the cycle, and a combination of self-interest and vitalized public opinion will force the application of the many remedies—not one remedy—which common sense will show to be appropriate. To anticipate the cycle is to neutralize it.

An influence of the sort suggested seems to have been operative during the past year. Memory of the disastrous aftermath from the inflation that culminated early in 1920 was still vivid enough after three years so that there was no desire to repeat the experience. In the upward swing that was in progress a year ago, business appears to have consciously subjected itself to restraint. It is now possible, however, after the event, to sense a certain sub-current of thought that possibly the restraint was too great. Some of those who swore off business stimulants on New Year's, 1923, seem to be wondering whether temperance after all cannot be overdone.

The task for students of business data is to promote among business men the habit of constantly tempering action by sober and scientific consideration of significant facts. To this end statisticians would do well to restrain their anxiety to become prophets. The reference to statistical services in the quotation with which this review starts, was doubtless made with knowledge that prognostication is an industry in which competition seems to be increasing. In several instances the event has so confounded the prophets as to open the way for the skeptics.

A curve based on historical and current data is fact; projecting the curve into the future is forecast. If a statistician or group of statisticians makes a wrong forecast, it in no way reflects upon the data from which the curve of fact is built. Such of the various agencies as are not precluded by commercial competition can perhaps enhance their contributions by pooling their scientific interests without too much concern for their prophetic quality, and centering their attention on the advance of statistical knowledge.

Establishing standards for deciding what data to collect, how to make it accurate, how to analyze it, what its meaning is, are all matters of scientific fact. Telling a business man what he ought to do about it is entirely a different matter, and involves essentially a management as distinguished from a statistical function.

From this angle it is gratifying to have the word of the National Bureau of Economic Research as expressed by Dr. Adams concerning the importance of merely increasing our knowledge as an instrument of business control. Overcoming existing statistical difficulties is the most obvious way of increasing knowledge.

As the next logical step towards the sort of continuing statistical service suggested, it is to be hoped that this composite "reconnaissance survey" may soon be followed by a more closely knit study of available data and a clarifying of scientific thought and public policy on the wisest means of supplementing such data. When this is done we shall have come a long way towards tempering the harmful effects of the business cycle. Possibly the National Bureau of Economic Research will come forward with plans for the further study which the situation seems to require.

Good Management in Government Work

I WISH to register protest against the pessimism expressed in certain discussions at the January meeting relative to the possibility of obtaining continuity of good management in government work. It was claimed that any advance that may be made here and there by capable department heads is only temporary because their political successors are likely to throw out their mechanisms and methods. So long as progress in management depends upon heads who are political appointees, this is likely to be the case. However, there is a large body of government employees who because of civil service or other reasons do not change with political administrations. The means of getting science applied to the management of government work and of securing continuity of its application consists in "selling" science in management to these employees.

If attempt were made now to apply "scientific management," by that name, to their work, much opposition would be encountered. Their understanding of "scientific management" is that which was popularized by organized labor in the publicity campaign of a dozen years ago—a scheme for "squeezing the last drop of blood out of the poor employee's heart." It was unfortunate that in the press publicity given to scientific management in 1912, organized labor thought it saw a menace in scientific management and committed itself to a policy of antagonism. Science in management, rightly safeguarded, is the best friend of labor. For, even without differential piece rate and task and bonus systems, it affords a record of the facts relative to individual performance, versatility and competence, upon which the merits of the individual employee's claim for advance in rate of compensation may be judged with much greater mutual satisfaction than under the alternative bases of personal favoritism, hazy impression, or length of service.

Each government employee, whether under civil service or not, is vitally interested in his or her prospects for advancement in rate of compensation; and a very considerable portion of these are employees anxious to be taught new work of the same and especially of higher grades. Not all government employees are indifferent to their work or unambitious. Many spend much of their leisure time and of their funds in study for self-improvement; I have personal knowledge concerning a number of such ambitious employees. It is very discouraging to these alert, intelligent, ambitious, energetic employees, after having, as they believe, brought their personal qualifications and accomplishments up to equality with those of their higher classed and more highly paid associates, to find that in the reclassification of personnel for a new year they have been left in the same old grade at the same old rate. I am personally acquainted with several government employees who have been so disappointed and so discouraged. In some cases at least it was my *impression* that they deserved higher rating. However, there were no standards of performance and no records of individual performance whereby either I or they could prove their contentions. These disgruntled government workers have agreed with me that it would have been much more satisfactory if there had been standards, records and other mechanisms whereby to *measure* their merits rather than to depend upon the *impressions* of even an examiner in charge who was in close daily touch with their work.

The accomplishment to be aimed at is to "sell" science in management to the great body of workers, —to make them understand thoroughly what science in management is and what it is not—to make them realize that science in management is their friend. Accomplish this, and they will press to have science applied to their management. Then when a department head does apply science in the management of his department, even though he give place to a political successor, the permanent body of employees will see to its continuity.

Miss Van Kleeck, in discussing Miss Gilson's paper, asked whether the further growth in the application of scientific management in private industry is to consist merely of the addition of one plant after another to the list of those which have installed it. It is obvious that, so long as the demand for science in management comes only from the proprietors of business establishments, this will be the case. The spread of science in the management of industry will greatly be accelerated, however, when organized labor comes to realize that science in management is beneficial, not detrimental, to the workers; when organized labor not only accepts the principle of science in management but makes it a very live policy of the labor unions. For then organized labor will demand its application in the establishments in which they work. Once its benefits are demonstrated by organized labor in the actual trial, the attitude of all workers, organized and unorganized, will become actively favorable. Not only will the spread of science in management be greatly accelerated, but, once installed, there will be fewer slip-backs to old methods.

The future of science in management will depend in very large degree upon bringing the great body of workers whether in private industry or in government service to a thorough understanding of what science in management is and of the benefit it can confer upon them. And, further, that organized labor in private industry and the body of civil service employees in government service are the bodies to which this understanding should be brought first.

T. W. MITCHELL.[1]

A Labor Leader on Scientific Management

IN VENTURING a brief discussion of the paper by Mr. Henry H. Farquhar entitled, "A Critical Analysis of Scientific Management"[2] presented to the Taylor Society at its meeting in January, I hope no one will think my views should be taken as those held by the leaders of the trade unions, but merely as the opinion of one who is keenly interested in the subject and who wants to see a system established that will get the best possible results for both employers and employees.

I do not know that I can do better than to quote the first sentence of the second paragraph of Mr. Farquhar's paper: "It is a little curious in view of the very considerable literature on this subject that the movement that we are discussing continues to be so persistently misunderstood." In the discussions I have had with any one on the subject of Scientific Management I have always emphasized that point, and I am afraid that many of us are still in the position of not knowing very much about the subject when we attempt to discuss it.

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[1] Associate Economist, Federal Trade Commission.

[2] *Bulletin of the Taylor Society,* Vol. IX, No. 1, February, 1924.

I have no hesitation in saying that the view is generally held among the legitimate trade unions today that the welfare of all depends on the workers' giving and receiving a fair day's work for a fair day's wage. The great difficulty in the past has always been to determine just what this day's work and day's wage should be.

Many employers charge that a labor union is merely a fighting machine and neither its members nor its leaders have any interest in trying to improve either quantity or quality of production. If there is any basis for the charge that the unions are merely fighting machines it seems to me that the responsibility for such a situation must rest heavily on those employers who have persistently misunderstood the whole philosophy of the trade union movement and who have forced it to fight for every inch of progress that has been made by the workers. We have had no option in the matter but it has not been our desire, nor is it now, to provoke or engage in industrial conflict. We believe modern industry is organized along such lines as to make it imperative that the workers should be organized for their own benefit as well as the benefit of the employers, because in the great majority of industries it is only through collective effort that industrial problems can be handled successfully.

It seems to me a great pity that Mr. Taylor when first bringing his system to the attention of the public gave so little consideration to the reaction which the workers in industry would have when he attempted to install his system in some particular plant. Whether rightly or wrongly it is nevertheless a fact that the workers became convinced that the human element in industry was totally ignored by Mr. Taylor.

I recall that during his examination at the time of the investigation made by the United States Senate, Mr. Taylor stated on the stand that his standard of requirement could be met on the average by only one out of five workmen, and his testimony along this line added to the convictions held by the workers that their personal welfare, both mental and physical, was regarded as of secondary importance in a speeding-up process that was designed to get the largest possible production. This naturally led to the belief that individuals would be compelled to work under such conditions as would result in their quickly expending their whole physical and mental energy, after which they would be thrown on the industrial scrap pile. So far as I know practically no effort has been made to convince the workers or their chosen representatives that this is not now the policy of those who are carrying on Mr. Taylor's work.

Through my acquaintance with Mr. Farquhar formed several years ago I have learned more about the real purpose and methods of scientific management than I ever knew before and I have no hesitation in saying that if those who are generally engaged in installing or supervising systems of this character hold the same view as Mr. Farquhar, as expressed to me and in his paper, there is no doubt in my mind that we can work in whole-hearted cooperation to the mutual benefit of employers and employees. The statement made by the delegates representing the organizations affiliated with the American Federation of Labor at their last annual convention held in Portland, Oregon, to the effect that "It is not the mission of industrial groups to clash and struggle against each other" and that "Industry must organize for service . . . for justice to all who participate" truly represents the purpose and desire of the organized workers.

It seems to me that any plan of scientific management must involve the creation of complete confidence between employer and employee, and in my opinion this can only be done by having the workers feel they have a medium through which they can protect themselves at all times.

Some employers may feel that this would mean a constant state of armed neutrality and the constant threat of force or coercion in such a situation. But there are many examples to prove that a fear of this kind is not well founded. For more than thirty years the stove moulders, members of the International Moulders' Union, have been well organized and have maintained a written agreement with the Stove Founders' Association, representing the employers in the stove industry. The same is true of the members of the International Typographical Union employed in practically all the newspaper offices in the country. Other examples could be cited but unfortunately not as many as should be possible.

I was especially interested in the paragraphs in the fourth section of Mr. Farquhar's paper which refer to the question of personality in management. and management's relations with the individual worker. The individual worker realizes his helplessness in modern industry today and no matter how attractive his job may be made, he always has the feeling that he is at the mercy of his employer and that if for any reason the employer desires to make a change, either in wages or working conditions, he can do it with or without the consent of the individual. This is a condition that to my mind prohibits that degree of mutual confidence so necessary in order to get the best results.

I read with the keenest interest Mr. Farquhar's observation towards the close of his paper concerning the relationship of scientific management with organized labor and I sincerely hope his suggestions will be accepted by his associates; I feel confident such a policy would be welcomed by organized labor. For organized labor wants to cooperate with employers for the benefit of industry as a whole and we welcome any plan that will bring about this condition and minimize the possibility of industrial strife.

ROBERT FECHNER[1]

News of the Sections

THE New England Section held a special joint meeting with the Industrial Relations Department of the Associated Industries of Massachusetts March 19 at Hotel Brunswick, Boston. The subject for discussion was "Reducing Costs and Increasing Output through Analysis of the Job."

T. A. Smythe of the Dennison Manufacturing Company presided at the round table conference in the afternoon, at which several business managers explained what they had done to increase production and decrease costs through careful analysis of detailed operations and through standardization of equipment and of methods of performing work.

At the end of this series Frank B. Gilbreth explained briefly the reason why he feels that the stop watch is entirely too crude for scientific motion study and emphasized the accuracy and permanence of the motion picture camera for this purpose.

After dinner W. O. Lichtner, in speaking upon "Integral Analysis of Manufacturing Processes" described the methods used in eliminating lost motion and perfecting and standardizing new methods in several different instances, emphasizing the necessity of analyzing each operation in accordance with what precedes and what follows it. Then Mr. Gilbreth again criticized uses of the stop watch and illustrated in a more detailed manner the objects and methods of micro-motion study.

The Chicago Section held a dinner meeting at the City Club, March 27. Charles R. Simmons of Bruner & Simmons, Inc., was elected Secretary-Treasurer in place of the late Fred L. Ham. The program committee, M. R. May, Richard McClure and William B. Ricketts was announced.

The address of the evening on "Scientific Management in the Sales Department" was given by W. R Williamson, Consulting Engineer in Management. He introduced his subject by a general discussion of Taylor's four principles, and the Taylor Society Report on Sales Engineering. He then illustrated methods which have been used in practice for rating the efficiency of salesmen. Jess H. Wilson of the Princess Pat laboratories and William P. Simmons, Sales Manager, the Workman Manufacturing Co., followed with a brief discussion of Mr. Williamson's methods. The meeting was then thrown open for general discussion and numerous speakers argued for or against the universal adoption of Mr. Williamson's interpretation of Taylor methods, as applied to salesmen.

On Friday evening, March 28, the Central New York Section held its regular monthly meeting at the Yates Hotel, Syracuse, N. Y. Fifty-one sat down to the informal dinner at 6:30, and at 7:45 H. L. Boyle, President of the Educational Exhibition Sales Company of New York City, started his stereopticon lecture on the preparation, interpretation and use of graphic charts. Mr. Boyle's lecture lasted for better than two hours, and gave very detailed information with regard to practically every kind of graphic chart used. He showed when and where the ratio or logarithmic chart should be used. He gave voluminous data on the Z chart; on river or spread charts; bar charts, etc. A very lucid explanation of the Gantt chart and its outstanding advantages was given; and many forms of string, ribbon, block and card control boards were illustrated and explained.

The New York Southern Tier Section on March 12 heard Clarence K. Stewart, President of the New Method Varnish Co., of Elmira, on "Reducing the Sales Force Turnover."

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[1] General Executive Board, International Association of Machinists, Boston, Mass.

On April 9, Claude T. Yates, Purchasing Agent of the Corona Typewriter Co., Inc. and past president of the Central New York Purchasing Agents' Association, presented "One View of the Qualifications of a Purchasing Agent." The meeting had a good attendance of representative men and a very interesting discussion followed the reading of the paper.

In connection with the annual meeting of the same date, the following officers were elected for the coming year: Chairman—Frank A. Hatch, Vice President and General Manager of the Shepard Electric Crane & Hoist Company, Montour Falls, N. Y.; Vice-Chairman—Earl G. Crooks, Head of Methods and Time Study, Willys-Morrow Co., Elmira, N. Y ; Secretary and Treasurer—Edgar D. Sebring, Personnel Manager, Corona Typewriter Co., Inc., Groton, N. Y.; Directors—the three above named; and last year's chairman, Howard G. Benedict, Industrial Engineer, Hornell, N. Y.; J. Carrol Kennedy, Kennedy Valve Mfg. Co., Elmira, N Y.; J. Herbert Brautigam, American La France Fire Engine Co., Elmira, N. Y.; O. W. Hilbert, Corning Glass Works, Corning, N. Y.

A paper on "The Interdependence of the Departments of a Plant" by Mr. Killinger, General Manager of the Willys-Morrow Company at Elmira, is planned for the meeting, May 12.

The March meeting of the Cleveland section was held Friday, March 21, at the Engineering Society headquarters in the Winton Hotel. Whiting Williams, author and consultant in labor relations, spoke on "Scientific Management and Personnel Interests."

Mr. Williams due to his unusual experience first as executive and then as a laborer was in a position to give a clear picture of the general discontent which prevails when management fails to assume its responsibility—the worker's lack of pride and interest in his job, his inclination to soldier where no incentives are offered, the increase of discontent when management harps about the worker's responsibility for turning out good quality, but does not provide good tools and proper working conditions—and of management's responsibility in providing personnel work at the important point of contact, the job.

The April 28 meeting considers the subject "Scientifically Set Quotas—their Aid to Manufacture and Sales," and the May 26 meeting is a summary of the season's meetings. H. S. Person, Managing Director of the Taylor Society, is scheduled to speak at this final meeting.

Prague International Management Congress July 21-24, 1924

THE following program has been arranged for American participation in the first International Management Congress to be held in Prague, Czechoslovakia, July 21-24, 1924.

Monday, July 21—Forenoon

Scientific Management

Nature; principles; objectives; achievements, industrial and other; tendencies and outlook; international importance.

Monday, July 21—Afternoon

The Human Element in Scientific Management

Individual relations emphasized; psychology; research, psychological and physiological; job analysis; scope and phases of personnel work.

Industrial Relations in Scientific Management

Group relations emphasized; wage systems; consent; participation in management; profit sharing; participation in ownership.

Tuesday, July 22—Forenoon

General Budget Control of Operations

Analysis of business conditions and tendencies; market analysis; coordinated sales, production and financial programs.

Wednesday, July 23—Forenoon

Sales Management

Principles and methods of planning and controlling operations.

Wednesday, July 23—Afternoon

Management in the Coal Industry

Present management; problems; proposed improvements in management.

Management of Transportation (Railways particularly)

Equipment, maintenance and operating methods; morale.

Thursday, July 24—Forenoon

City and State Management

"De-politization"; managing the city as an economic unit; city manager; tendencies in organizing the state as a business unit.

Management in the Federal Government

Tendencies towards reasonable reform; scientific investigation; management of national resources; aids to commerce and industry.

Thursday, July 24—Afternoon

Vocational Education

Advanced and Specialized Education for Commerce and Business Administraion

Education for the Profession of Engineering

Evenings during the period July 21-24 are reserved for social, musical and similar functions to be arranged by the Prague Committee.

The period July 25-August 1 will be devoted to excursions to industrial plants, resorts, agricultural centers and institutions showing the industrial resources and development and the culture of Czechoslovakia.

In its general outlines this first International Management Congress was conceived and planned by the Government of the Republic of Czechoslovakia and the Masaryk Academy of Prague. It was inspired in the minds of leaders of the progressive Czechoslovak people by realization that one basis of recovery from the material and moral ravages of the war and of the restoration of a prosperous and enduring peace must be better international understanding of the principles and methods of utilization of economic resources.

American participation is the response to a cordial invitation to the engineers and executives of the United States to attend, and particularly to organize for the Congress a program which will present the most advanced methods of management developed by American industry.

The official invitation was extended by the Government of the New Republic of Czechoslovakia and the Masaryk Academy through the American Engineering Council to the Four Founder Societies—American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, American Society of Mechanical Engineers and American Institute of Electrical Engineers, and to the member societies of the American Engineering Council. The Joint Conference Committee of the Four Founder Societies requested that the responsibility of organizing and promoting American participation be assumed by a Joint Committee on American participation consisting of representatives of the American Management Association, The Management Division of the American Society of Mechanical Engineers, the National Association of Cost Accountants, the Society of Industrial Engineers and the Taylor Society.

The program has been arranged, at the request of the Czechoslovak sponsors~~, to~~ present (1) the principles and methods developed by the most progressive American industrial management, and (2) the methods of management, the conditions, and the problems of certain American industries which are important basic, national industries of Czechoslovakia. The selection of speakers and authors of papers insures that this will be an industrial congress of the first magnitude.

The Conference will be open. Every American who desires to attend will be welcomed. The Czechoslovak Government urges that as many American engineers and executives as possible take part in the proceedings.

Americans who plan to attend the Congress are advised to register by letter to The Committee on American Participation, Room 611, 29 West 39th Street, New York City.

THE Association of Russian Engineers has been organized to study engineering progress in this country, and to inform the engineering profession of this country concerning the progress of Russian technique.

Taylor Society members are invited to its first open meeting on Monday April 28 at 8:00 P. M., in Room 3, Engineering Societies Building, 29 West 39th Street, New York City. Frank B. Gilbreth will speak on "The Value and Aim of Scientific Management" and Walter N. Polakov on "The Progress of the Scientific Management Movement in Russia."

Reviews

The Merchants' Manual, Edited by Lew Hahn and Percival White, McGraw-Hill Book Company, Inc., New York, 1924, pp. XIV—600.

The National Retail Dry Goods Association needs to be congratulated upon the publication of the Merchants' Manual which has just come from the press, and much credit is due the editors, Lew Hahn, the Secretary of the Association, and Percival White, for the large amount of material that has been carefully collected and edited.

It is, of course, needless to point out at the start that such a volume as this of only 600 text pages cannot cover adequately the whole subject of department store or even of large retail store operation. The most that such a book can do is to open up the subject in a broad way and to give only the broadest treatment to each topic. If the reader has that thought in mind as he reads the volume, he is not quite so disappointed in the absence of concrete guidance as to how details are to be handled in solving certain operating problems of a larger store, and in finding more often descriptive text matter rather than concrete exposition of details. The book, therefore, serves to stimulate the hope that, as the editors themselves have expressed it, this is only a beginning which will later be improved upon by revision, and that this present volume will serve as a basis for later expansion into either a larger volume or two or more volumes. There is no reason why the retail craft should not have as much scientific data as, for example, the printing trade which has already published a multi-volume set, or as much as the factory management group whose data is already covered by sets of anywhere from three to six volumes. If, however, it is not possible or desirable from the point of view of the editors and publishers to expand this first volume into more than one volume, the reader still hopes that the next edition may be expanded in the text contents by perhaps using the same format and style that recently appeared in the Accountants' Manual published by the Ronald Press; perhaps after all this latter suggestion is the one which would render a more convenient volume for those who will want to use it.

It is very hard for one connected with one of the larger stores and for one who has intimate knowledge of methods of other stores of equal size through personal and frequent visits to them to appraise the usefulness of such a volume as this to the smaller store executives; needless to say, the book will appeal to them more than to any one else for much of the material found in the volume would already have been gathered and considered by the executives of the larger stores in connection with the problems of their own store. The volume does contain a considerable amount of information and valuable suggestions to the operating executive who has not been associated with a firm which can offer or which can even see the immense valuable return from the money spent in travel and in visiting other organizations.

The book therefore, the reviewer believes, will appeal particularly to three classes of readers,—the executive described above who has been deprived of contact with other stores or with his fellow craftsmen who attend conferences; secondly, the smaller store executive; thirdly, the student who is studying retailing and store management in a college or in a professional school of business. It undoubtedly will prove a valuable educational tool particularly in a school of the type conducted by Mrs. Prince.

The book covers the physical factors of location, structure, layout and equipment; store operation including methods of receiving, storing and delivery; store organization which includes such subjects as organization, finance, credits, collections, statistics, accounts and budgets; merchandising under which are treated buying, stock keeping, mark-up, profits and turnover; advertising and direct-by-mail sales; and finally the subject of personnel. The contributors are all practical men engaged in actual store operation and their names alone would vouch for the value of the book, and the efficient results that have been secured in the stores with which these contributors are connected would suggest at least the advisability of each store executive adding this volume to his shelf of reference books.

The best parts of the book are those in which concrete facts are given in the form of statistical tables that may be used as a guide to the operating executive or proprietor and in comparison with his own figures. For that reason the tables of comparative cost of operating gasoline, electric and horse-drawn trucks are valuable, and especially valuable are the tables of sales statistics on pages 453 to 461. The contribution of Mr. Clarkson (page 253) in which he develops the significant indices of store operation and points out the figures that a store should collect is quite valuable. It gives retailing the terms of statistical measurement which it has so long needed and which other trades have had in such factors as the ton-mile in transportation or the kilowatt hour in the electric power industry.

The chapter on personnel has been made especially good by the introduction of forms, for example the various forms of application blanks collected from different stores. It allows comparison and gives one suggestions for his own problem. If the same idea had been followed in the matter of store organization and the chapter on that subject had been amplified by inserting copies of organization charts of some of our larger stores in order to show how authority had been distributed and how responsibility had been lined up, the chapter that is now broad in its treatment would have offered much scientific knowledge.

Personally, I am glad to have such a book available. It has long been needed by those engaged in the retail business. It is full of suggestions to most of us: it has some suggestions for all of us. As a book that its authors frankly confess is only a beginning and by nature of the subject treated cannot be exhaustive, it has gone well beyond the expectations of all of us who have been anticipating its publication with interest.

Merrill W. Osgood.[1]

Year Book 1923. National Association of Cost Accountants, New York, 1923, pp. 377.

The National Association of Cost Accountants has had a very rapid growth since its organization by Major Nicholson four years ago. It now has a membership of 3,500 and its balance sheet shows a surplus of $21,000. One might expect the literature of such a mushroom organization to have a similar dashing and flighty character. Happily, however, the contents of the N. A. C. A. publications is technical and their manner scientific.

The 1923 Year Book is principally an account of the proceedings of the annual meeting at Buffalo in September. The papers contributed cover a wide range of subjects and are, with few exceptions, of excellent quality. They deal less with cost accounting per se than with its relation to other business functions. The subjects discussed, some of which will certainly interest readers of the *Bulletin*, include:

Section III. Methods of wage payment as related to costs.

Section IV. To what extent, and in what manner, should detailed cost figures be given to department heads?

Section V. Actual examples of the advantageous use of operating budgets.

Section VI. On what basis should raw material be charged into production costs?

Section VII. Should plant and equipment be depreciated on cost or replacement value?

Section VIII. Should detailed cost work be centralized in the head office?

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[1] Jordan Marsh Company, Boston.